BACKYARD FARMING

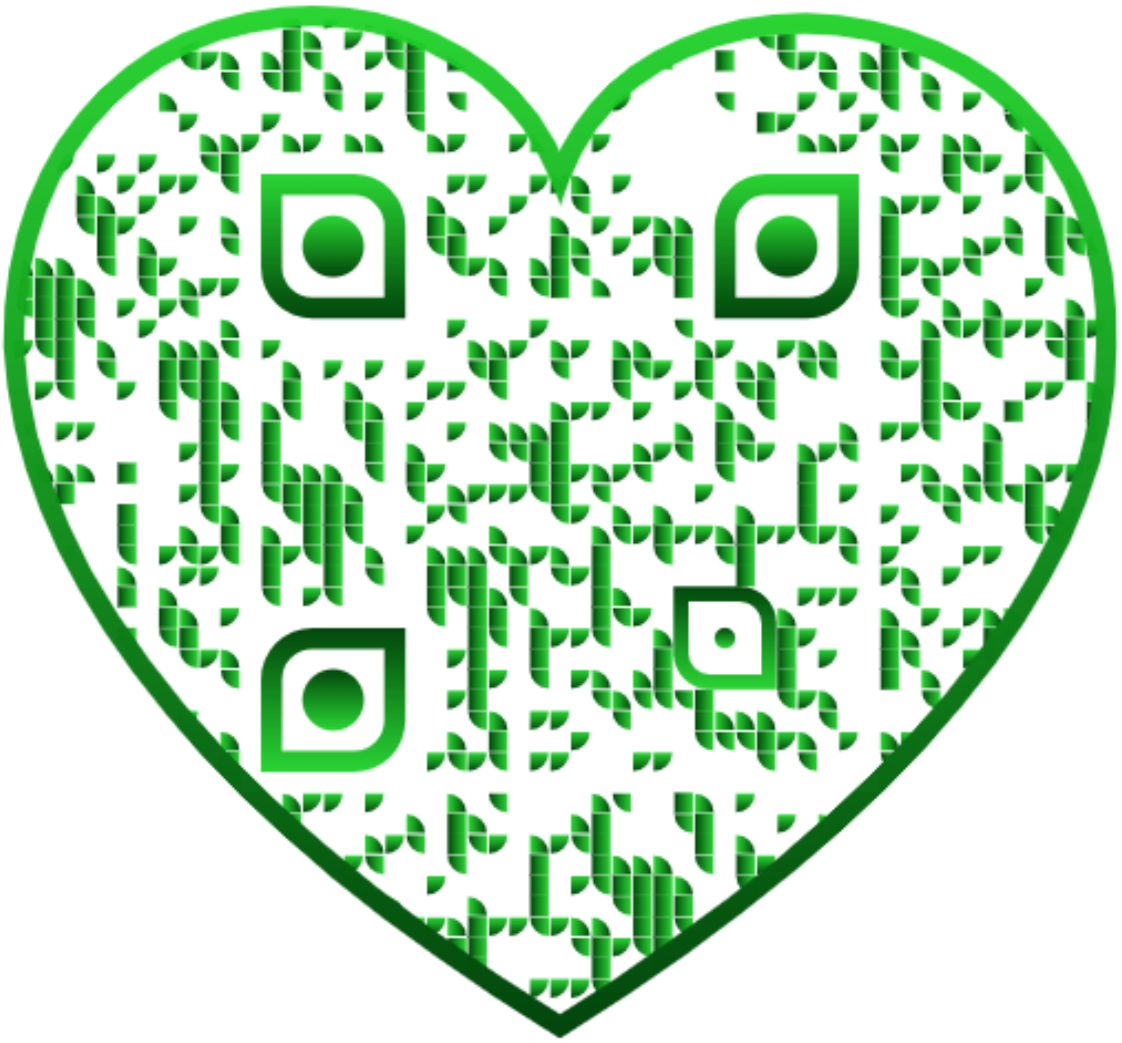
Make your home a homestead

RAISING CHICKENS

"EXPERT ADVICE MADE EASY"

Kim Pezza

hatherleigh



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INTRODUCTION

First comes the garden, and then come the chickens. Many backyard farmers who start out with vegetable gardens almost invariably end up adding chickens to the homesteading family. With such a wide variety of sizes, shapes, and breeds to choose from, chickens can end up becoming a very important part of the homegrown food chain. Whether for eggs, meat, or both, chickens are not only a pleasant addition to your home produce, but a valuable one as well. This book will cover the basics of chicken keeping and rearing, as well as breed selection, housing strategies, the rules and regulations for urban and city possession, raising your birds from chicks, ordering and feeding your flock, free-ranging your birds versus containing your birds indoors, and so much more. In short, this book is a primer for all those interested in keeping and caring for these favorite fowl of the farmyard.

Perhaps the most popular animal you will find on a barnyard, homestead, backyard, or urban farm is the chicken. Besides the cow, the chicken is the first animal most people picture when they think about a farmyard staple. Chickens come in all sizes and colors, as do their eggs, so while there's a chicken for every farmer and every situation, it's important to choose the right one.

You will find that the chicken is truly a multifunctional animal. We eat their meat and their eggs; chickens can help control the bugs and grubs in the garden; our grandparents and great-grandparents would even use their feathers for pillow making (although goose down was preferred). We breed them for show, make pets out of them, and compost their manure for garden use. We even use some chickens to foster and hatch the eggs of other birds.

Chickens have been part of the homesteading tradition for centuries, with some breeds of chicken going back thousands of years. Some breeds are close to being lost to us, while still others believed to have been lost

have been found in rural backyards, waiting to be rediscovered and brought back into the world.

But as much as we revere the chicken and welcome it into our yards and barns, we have also done a great disservice to this bird. We raise them in tight confinement their entire lives, dock their beaks, and crossbreed them to maximize their productive capacity with little regard for their overall health. What is worse is how we have forced them to lose their natural survival instincts by keeping them in climate-controlled buildings, where they are unable to forage for natural foods. In recent years, notable effort has been made to reclaim these industrialized breeds, with backyard farmers and homesteaders raising and incorporating these birds into their flocks. Even these early attempts have shown promising results, with chickens from industrial breeds being reintegrated into urban and suburban flocks as early as the second or third generation. The damage done is by no means permanent, and as a result, there is much we can do to speed up the process of restoring these birds to their natural lifestyle.

Through the very good and the very bad that we have bestowed upon this bird, it has continued to play an important role in the lives of humans throughout the world. And in many ways, we play an important part in its: many people are now fighting for the survival of the endangered breeds, as well as for more humane living and slaughtering conditions for those in commercial confinement.

This book will act as an introduction for those of you who are adding (or thinking of adding) chickens to your family for the first time. Among the topics covered are the differences between breeds; requirements for housing, feeding, breeding, and hatching; and everything in between.

As a new “chicken person,” you will find your charges interesting, comical, useful, and addicting. You will discover that, if allowed, each bird will develop its own personality, especially if you plan to keep them long-term as pets or for egg use instead of for only a few weeks or months for meat.

This book also comes with a warning: chickens, as they say, are like potato chips. You can’t keep just one, and it won’t take you long to get hooked.

This book is meant to serve as a basic primer for those seriously considering raising their own chickens. It is a short but concise book that

will touch on all of the major points that you may want or need to consider in your quest to obtaining your first birds, be it a few or an entire flock. So kick back, relax, and have fun learning the basics of this most popular of farm animals: an animal the entire family can enjoy.

MEET THE EXPERT

Kim Pezza grew up among orchards and dairy and beef farms having lived most of her life in the Finger Lakes region of New York State. She has raised pigs, poultry and game birds, rabbits and goats, and is experienced in growing herbs and vegetables. In her spare time, Kim also teaches workshops in a variety of areas, from art and simple computers for seniors, to making herb butter, oils, and vinegars. She continues to learn new techniques and skills and is currently looking to turn her grandparents' 1800s farm into a small, working homestead.

CHAPTER 1

A BRIEF HISTORY OF THE CHICKEN

With all of the breeds of chickens that we have today, it may be hard to believe that they all may have originated from a single bird called the **Red Jungle fowl**. Although the initial domestication of the bird took place thousands of years ago in Southeast Asia, the Red Jungle fowl still runs wild in that area today. In fact, it is said that the chicken was the first domesticated animal, going back 7,000–10,000 years. Curiously, however, the first domestication was not for eating or eggs … but for fighting use.

The domesticated chicken spread quickly throughout Eurasia, Western Europe, and Asia, and it is believed that the first chickens came to American shores as early as the second trip of Christopher Columbus (along with pigs, cattle, and horses) in 1493, one year after his famous first landing.

Barred Rock hen. Photo courtesy of Micky Rizor Ridgway, Ridgway Hatcheries, Inc.

The first actual American breed was the **Dominique**, which can be traced back to as early as 1750. As recently as the 1970s, only four flocks were still known to exist. However, due to participation in breed-rescue programs, the Dominique has made a comeback. Having raised this breed myself, I have found it to be a sturdy, healthy, dual-purpose breed (good for egg and meat use) as well as a gentle bird. Today they are on the breed watch list of the American Livestock Breeds Conservancy (www.albc-usa.org). It should also be noted that the popular Plymouth Rock chickens that we see today were developed from the Dominique in the 1870s, with the telltale difference between the two breeds being their combs (the red fleshy area on the top of their heads). The Dominique has a smaller comb, called a rose comb, while the Plymouth Rock has the larger, typical comb you find in most common breeds.

Presently, the current breed classifications (with classifications based on the areas of the world where various breeds or types of chickens originated from) are broken down into four categories:

- American
- Mediterranean
- English
- Asiatic

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According to the United Nations' Food and Agriculture Organization (FAO), there are about 18.5 billion chickens in the world, meaning that as of 2011 there were more chickens worldwide than there were people. According to data from the United States Department of Agriculture (USDA) Chicken and Eggs Summary, there are 4–10 million chickens in the United States alone.

Since the resurgence of the small homestead and backyard food producer, chickens are again finding their way into backyards and pastures as well as into the cities and suburbs. Some will even make it to household-pet status. Despite the passage of time and the changes in the world, chickens are slipping easily back into their accustomed roles as members of the family and an important part of the family food supply.

CHAPTER 2

BREEDS AND TYPES

For our purposes, there are essentially three types of chickens in the world: those that are raised for their **meat**, those that are raised for their **eggs**, and those that are considered **dual-purpose**, meaning they are good for both meat and eggs. Some breeds will be preferred over others for certain uses due to (among other factors) production rate, body type and size, growth rate, and even available space. However, it is worthwhile to note that any type of chicken may be raised for its eggs or meat.

Chickens for Meat

Chickens raised specifically for meat are usually a larger, meatier bird. Some breeds may be ready for slaughter at the 10–16 week mark. At this age, they would be considered **fryers**, which are young birds of either sex, but many times are surplus roosters. At this age, they are at an ideal size for tender meat use (like for frying or barbecues), unlike their older counterparts; many times, an old hen or breeding rooster is past their production time. This will mean a much larger bird and usually tougher meat. These older birds would normally be used for roasters, soup, or stew.

Breed examples for meat use are as follows (with * signifying dual-purpose):

- Cornish Cross (this breed is covered further later in the book)

- Dorking
- Delaware
- Plymouth Rock*
- Sussex
- Jersey Giant*
- Orpington
- Cornish

Chickens for Eggs

Although they can also be used for meat, there a number of chickens favored primarily for egg production. The following breeds are favored for their eggs and include (but are not limited to):

- Rhode Island Red (nonindustrial type; see Chapter 11)
- Leghorn (nonindustrial type)
- Australorp
- Ameraucana (this breed lays colored eggs)

Depending on which bird or birds you select for egg production, it will normally take 17–26 weeks from hatching for a hen to mature enough to begin laying eggs. Also, if regulations in your area do not allow roosters yet, don't worry: more and more city and suburban owners are fighting for change. In the meantime, your hens will still lay eggs for you just fine without a rooster. The eggs simply won't be fertile, which means that the eggs will not be candidates for incubation.

If you want fertile eggs, you *will* need a rooster. If you cannot have a rooster, but still want to hatch your own chicks, there are options available. Many small breeders will sell fertile eggs that you will be able to bring home and incubate (incubation will be discussed in later chapters). Keep in mind, however, that you will most likely get some little roosters from those that do hatch. So if you have no need for extra roosters or cannot have roosters where you live, you must be prepared to have a new home in place, be able find a new home for these chicks to

go to, or be ready to put them in your freezer when they reach fryer age.

A rooster with hens. Photo by smerikal under the Creative Commons Attribution License 2.0.

Dual-Purpose Chickens

Finally, there are those breeds that are considered dual-purpose. As stated earlier, these birds are favored for both egg and meat production. As with egg and meat birds, there are preferences for dual-purpose as well. A dual-purpose breed is an excellent choice for those who want a good laying bird that will also eventually be a good meat bird, but who may be limited in their available space.

Good dual-purpose breeds include:

- Plymouth Rock
- Jersey Giant
- Barred Rock
- New Hampshire
- Dominique
- Silver Laced Wyandotte

Keep in mind that these lists represent only a small sampling of the birds

available for your backyard or homestead. You may, depending on space, choose one breed or a combination of a few different breeds. Also, although there are specific breeds preferred for specific uses, if there is a certain breed that you really want, in most cases you can make it work for you. It cannot be stressed enough that almost any chicken may be raised for egg and/or meat use. So if there is a particular breed that you just have to have in your coop, go for it!

Breeds

When we think about chickens on the farm, we often picture a big red or white rooster with his hens strutting around the barnyard. In fact, there are actually a number of different breeds and variations of breeds of chickens (over 100 breeds, with over 400 varieties), not to mention all the mixed "hybrid" breeds that many owners have. Looking at the four classifications of chickens that we touched on in Chapter 1, each class includes a number of breeds, grouped by their origins into the regions of their classifications.

Some of the breeds included within these classifications are as follows:

American

- Plymouth Rock
- Dominique
- Wyandotte
- Rhode Island Red
- Jersey Giant
- Holland
- Delaware

Mediterranean

- Leghorn

- Minorca
- Blue Andalusian
- Buttercup

English

- Dorking
- Orpington
- Sussex
- Australorp
- Cornish

Asiatic

- Brahma
- Cochin
- Langshan

Chickens on stall door (from left to right: Partridge Rock hen, Wyandotte hen, Cochin Cross rooster, Dominique hen, Rhode Island Red). Photo courtesy of Amy Kolzow.

Although most of these breeds (as well as a large number of others) can be found through local breeders or reputable hatcheries, the typical backyard farm or small homestead will most likely have one or more of the following breeds:

Rhode Island Red
(nonindustrial)
Bantam
White Leghorn
(nonindustrial)
Barred Rock
Plymouth Rock
New Hampshire
Australorp
Ameraucana
Brahma
Wyandotte
Mixed Breed
Orpington
Silkie

Of these, the most popular home breeds are primarily the Plymouth Rock, Rhode Island Red, White Leghorn, Jersey Giant, Bantam, and Ameraucana. Heritage breeds are also finding their way into backyard flocks. The best ones are the Rhode Island Red and White Leghorn.

The Plymouth Rock, Rhode Island Red, White Leghorn, and Jersey Giant have gained their popularity due to their ease of keeping, usually good temperament, the number of eggs a single hen can produce in a laying cycle, the amount of meat a single bird can provide, and ease of obtaining these birds.

Bantams are popular due to their smaller size. These birds are great for kids to handle, and you can keep more bantams in the same space than you would keep fewer “regular”-size birds.

Ameraucana chicken. Photo by Will Merydith under the Creative Commons Attribution License 2.0.

The **Ameraucana** is a favorite due to its ability to lay colored eggs. Also known as Easter egg chickens, Ameraucanas can lay green, blue, olive, and pink eggs as well as a few additional shades (though the most common colors are green and blue). Although the eggshells are in full color, the egg itself is no different than its white or brown counterparts, and may be used just like any other egg.

High on the list of the most popular home and homestead birds are the Bantams. The Bantam is basically a miniature chicken, usually a smaller version of one of the larger breeds, with all the characteristics of the larger breed, but on a smaller scale. Historically, the Bantam name derives from the Indonesian seaport of Bantam. It was at this seaport that these birds gained favor with European sailors: the little birds were much easier to carry with them out to sea than their larger counterparts. Despite their small size, a Bantam hen can lay up to 150 eggs per year. However, as they are a smaller bird, the eggs they produce are also smaller in size. Yet the eggs are just as delicious and edible as those from a full-size bird.

Silkie hen with chicks. Photo courtesy of Micky Rizor Ridgway, Ridgway Hatcheries, Inc.

Another breed on the list of birds worth mentioning is the **Silkie**. Silkies are another smaller chicken like the Bantam, but look like little balls of fluff. Although they can and occasionally are raised for meat, this breed is primarily raised for eggs, showing, as pets, or for brooding —the hens are great brooders (hatching other hens' eggs as well as their own).

Silkies, like Bantams, are excellent breeds for the homesteader with limited outdoor space or those living in areas where keeping full-size birds would be a bit more difficult. Due to their size and appearance, they are also a good bird for children, as a smaller bird is easier for smaller hands to handle, and the kids will love the fluffiness of the birds.

Endangered Chickens

Sadly, although there are hundreds of chicken breeds in the world, there have also been many breeds that have been lost or are nearing extinction. Although there are not specific statistics for poultry alone, existing statistics for lost livestock as a whole are alarming. Since the beginning of this century, a total of 190 breeds of livestock in general

(including chickens) have become extinct, with 60 of those happening within the last six years. According to the American Livestock Breeds Conservancy, in the United States alone, a third of the currently existing livestock are rare or endangered, including 63 percent of poultry breeds. In Europe, fully half of the breeds that were alive in the 1900s are now extinct. While a few of these breeds might somewhere along the way pop up in an isolated backyard or homestead somewhere in the United States or Europe, most of these animals and birds are lost to us forever.

Chickens as well as many livestock breeds are lost for a few reasons. One of the biggest reasons is industrial food production, in which only a few breeds are depended on for all production, due to their egg-production capabilities or fast growth for meat (this will be further discussed in Chapter 9). Relying on only a few breeds for an entire commercial/industrial market is a recipe for disaster. It leaves both the commercial egg and meat industries very vulnerable to being wiped out in one swoop of illness, especially the egg industry, in which a single breed is what the commercial egg industry depends on. Having recognized this, numerous organizations and individuals have been working to keep the other numerous breeds in the chicken world alive. Backyard chicken owners, small homesteaders, rare-breed livestock organizations, and some commercial and noncommercial hatcheries are all involved in making sure that, even if the rare breeds aren't thriving, they're at least kept from extinction.

Before You Dive In … Are They Legal?

In selecting the breed of chicken best for your needs, there are a few things to think about. Although keeping chickens is covered in more depth in the next chapter, there is one thing in particular that all potential owners or breeders need to look at before deciding on anything else, including choice of breed or type: are chickens allowed where you live?

If you live in a rural- or agricultural-zoned area, then most likely you will not have a problem with keeping your birds. However, if you live in a rural residential area, town, suburb, or city, there may be restrictions (such as allowing hens only), or you may not be able to keep them at all.

The bright side is that more and more cities and suburban areas are allowing backyard chickens. Although you may only be able to keep about a half-dozen hens, they will supply enough eggs for a small family. The downside is that many places still don't allow chickens in the backyard, and those that do may not allow roosters. So if you are not sure, check with the zoning office in your area.

CHAPTER 3

KEEPING CHICKENS

So you've done your homework and found out, happily, that you can keep chickens at your home. Now it's time to select your birds and figure out how you will be housing and keeping them, both of which are reliant on one crucial factor: space.

First, how much space do you actually and realistically have in which to keep chickens? As chickens come in a variety of sizes, from the very large Jersey Giants to the little Bantams, your space needs to be able to support the number and type of bird that you plan to raise. Keep in mind that you will need not only animal space, but housing space as well. How much space you have available will not so much dictate the breed of bird you will get as it will the number of birds that your space will be able to handle.

When building or creating your chicken's space, a general rule of thumb is **4 square feet of space per bird inside the coop** and **ten square feet per bird in the outdoor space**, no matter how many birds you have. If you have the space, you may wish to build your coop and run space larger in size, but the figures given above should be the minimum.

Choosing the Right Accommodations

So exactly what options do you have when it comes to housing your flock? There are basically three options available to the new chicken owner.

They are:

- Containment
- Free-choice
- Free-range/Pasturing

Containment

The first (and probably least favorable) way to keep chickens is using the **containment method**. Used primarily by commercial growers, containment housing is just as it sounds: the birds are kept contained indoors throughout their entire life. Layers are usually kept in small cages, with multiple birds per cage (many times in cages too small to house them), while meat breeds are allowed to run around only within the house. The outdoors and oftentimes natural daylight are off-limits to these birds.

Some will argue that confinement housing is safer and healthier for the birds. And while containment may be good in an emergency or temporary situation, it does not seem to hold true as beneficial to the birds as a 24–7 way to exist. It also can prove to be much more work for those responsible for the upkeep of the birds as well. Fortunately, most backyard chicken owners and small homesteaders do not choose to keep their birds in this manner.

So what are the arguments in favor of containment housing? If you are setting up a flock in a very harsh cold climate or during a cold season, then containment or partial containment may be the best alternative, both for your needs and to provide less stress overall for the birds. Partial containment provides shelter during the worst times, when weather conditions could become deadly for birds with long-term exposure and being indoors 24–7 would be necessary for the health and safety of the birds.

Containment housing. Photo by Wonderbuilding under the Creative Commons Attribution License 2.0.

Another argument for containment may be predator protection. In areas where predators (such as coyotes, raccoons, weasels, rats, hawks, and other predatory animals) pose a very high risk to chickens, to the point where even a fence cannot keep them safe, some owners may feel containment housing is their best option for the safety of their birds. In extreme cases, this may be true and indeed keep the flock safe. However, in reality, it would be quite unusual to have so many problems with predators to warrant keeping the birds contained their entire life. Reality dictates that there will be some predator problems. The more secure you keep your birds indoors or out, the less of a problem or loss you will have. Yet containing your birds 24–7 is not the end-all answer, unless you have a period of heavy predator activity or a predator that has outdone or outmaneuvered any and all obstacles you have put in its way, which can happen on occasion (for example, the coyote has been known to scale a six-foot fence, while weasels and rats can squeeze through tiny openings within your fence or coop).

Although a predator may hit a flock during the day, many problems

will actually arrive after dark. Yet, at night, the birds should be indoors anyway, even if they are free-range.

What about the con side of containment housing? There is lack of fresh air and natural light. The birds may become overcrowded and, in turn, attack each other. If one bird becomes ill, there is a good chance that the illness will spread throughout your coop like wildfire, meaning the only way to keep the risk of illness out is to medicate healthy birds, whether they need it or not. Finally, the birds could lose their ability to adjust to climatic conditions, especially if they are being kept in climate-controlled buildings. In the end, 24–7 lifetime confinement housing is not necessary, nor is it even in the best interest of the birds, even against predators.

If your predators are of the human type, as mentioned before, then you have an entirely different problem, one that even night containment may not help. If you do suspect a human predator, a camera inside and outside of your coop could prove helpful, along with a motion-detection light. Suspected thefts by humans should also be reported to local authorities. Be warned, though: sadly, depending on where you live, reports of livestock theft may or may not be taken seriously or considered a major theft. As livestock thefts in the United States rise, however, this attitude is slowly changing.

Electric Fencing

An **electric fence** running along the outside of your regular fencing may help in keeping predators out, but there are things to consider when using one. First, you *must* remember that an electric fence has live current running through it. Absentmindedly leaning against it or touching it, although not deadly, will be a memorable experience. Next, the fences must stay clean and clear. Things such as high grasses and deep snow can short out the fence, rendering it useless against a predator. Finally, you must continually check for broken connections. Again, this can

render the fence useless against predators.

Should you decide to install an electric fence, there are a few different ways you can go with installation, including solar. Electric fencing isn't cheap (no good fencing is), so it will be beneficial to do your homework, ask questions, consider your budget, keep in mind as to whom you want to keep outside of the fence and whom you want to keep inside the fence, and then make your decisions based on what you have laid out.

Free-Choice

The next option you have for your birds is what I call **free-choice**. Free-choice is basically keeping your birds in the typical chicken coop configuration: a chicken coop/house of whatever size needed, either inside a large fenced area or attached to a large outdoor pen. In either scenario, the coop will have a small door that can open and close, allowing the birds to go in and out at will, and which can be securely closed at night. It can also be raised off the ground with ramps used to enter and exit.

Nest boxes (the place where a hen will lay her eggs) are usually built into the back or side wall. There should also be a larger door to give the caregiver access to the interior of the coop for easy cleaning. If the coop is large enough, with plenty of wall space, then a window (with a screen) is a nice little luxury to have, providing extra ventilation, especially in hot summers during the overnight hours (if you have a power source, a fan would be an additional help to keep your birds cool).

Free-choice chicken coop. Photo by redjar under the Creative Commons Attribution License 2.0.

The outdoor fenced pen should be large enough to prevent overcrowding. The type of fence is up to you, but chicken wire is best (the wire comes in different weights and different opening sizes, so you might want to ask for assistance the first time you purchase a roll). As far as the openings in the fencing wire, the smaller the holes, the more secure the space and the less likely you will have chicks escaping.

If you plan on allowing chicks to roam the pen, the smaller the weave, the better. Yet this still isn't foolproof. Some chickens, especially the heritage breeds (which will be discussed in a later chapter), may jump or fly over the top of an open pen (yes, chickens *can* and *do* fly). This isn't the end of the world: if you feed them in their pen or coop only, and do not throw feed outside of the coop, they will return at feeding time when they see you. Jumping or flying over the fence can become a real problem when you are in a city or suburban area that requires you to keep your birds fenced. There are a few options to settle this problem. A simple solution is to make sure the fence is too high for the birds to be able to fly over, which would be at least six feet tall (I have had them clear a fence as high as 5 feet). You could also cover the top of the fenced area with more fencing, but this can easily get expensive, and you would need a frame to hold the fence on top. The last solution would be to use bird netting over the top of the pen (make sure that if you decide to cover your pen, whether with more fencing or netting, you

can still operate comfortably in it to clean the pen and check your birds).

Bird netting is simply a piece of netting, usually made of a plastic or similar sturdy material, which discourages birds from doing an unwanted activity. As well as covering pens, bird netting is used for keeping birds off of plants, fruit bushes, and small fruit trees (when draped over a plant). Bird netting on top of the fence will also discourage predator attacks from the air, acting as a barrier between your birds and a bird of prey.

The purpose of a free-choice coop setup is that the birds choose whether to be indoors or outdoors while still being in a semi-contained situation. The birds can run indoors during sudden weather changes as well as get out and run around in the pen for fresh air, catching insects, scratching the ground, and rolling in the dust. Even with this method, the birds should be kept inside the coop at night for extra protection from predators, regardless if all fencing precautions have been taken.

Free-Range/Pasturing

The third option is **free-range** or **pasturing**. This option is one that is being favored more and more by both the home grower and the consumer, especially for meat breeds.

Free-range or pasturing is simply giving the birds freedom to roam in a yard or pasture. The area may or may not be fenced, but normally it is a fenced area, a fenced pasture, or a large backyard rather than a pen. However, like with free-choice housing, the birds should still have a coop to go into at night when you bring them in from the pasture to protect them from very inclement weather that could be dangerous for the birds. And while freerange birds may be happier and even healthier in the long run, just as with any pastured livestock, they are more susceptible to predators, especially (and most likely) at night.

Chickens may be allowed to freely range or pasture with other animals. My chickens and goats will free-range together, and some of my chickens favored the pen that I kept my pigs in, and would even eat with them. A few words of warning, however: many farmers I've spoken with have said that pigs will kill chickens that enter their territory, and they do not recommend interaction between the two species. Now I have never experienced any aggression by my pigs toward my chickens, even

with litters involved. I have even observed them eating side by side at the pig troughs, and oftentimes, the chickens will sleep on the pigs' backs. However, as this seems to be the exception to the majority of encounters others have experienced, please do not assume that you will have the same experiences I've had. As a precaution, it would be best to keep your pigs and chickens separate.

Some farmers will let their chickens into the cow pasture after the cattle have been rotated into a new area. The birds will go in, and through their scratching and pecking, they will help to loosen up the ground that the cattle have packed down. They will also break apart and spread the manure left behind as they look for insects to eat. If you are in a spot that is back far enough away from the road and have no close neighbors, then you can allow your birds to have free rein of your property. Even if you have a number of acres, the birds usually will not wander that far away.

Now for the big question: how do you bring free-range birds back to the coop? Usually, you will still feed free-range birds some grain, seed, or prepared feed to supplement their grazing, doing so at least once a day. To bring the birds in at night, simply start them on an evening feeding regimen. If you keep them on schedule, you will see most, if not all, of your birds heading back to the coop for their evening feeding. Herding dogs are also a huge help in bringing them in and are a wonderful time saver as an alternative to you trying to chase them down and round them up yourself. Whatever you decide, as you get to know your birds, you may find other ways to make bringing in free-rangers a bit easier. The bottom line is however you do it, bring the birds in at night for their own safety and your piece of mind.

Flooring

An important part of your chicken coop construction that you may not give much thought to is the floor. If you are purchasing a prebuilt coop, the floor is usually already part of the construction. If you are purchasing a kit, the floor may or may not be a part of it. However, if you are constructing your coop on your own from scratch, then you definitely will need to think about the type of floor you want to include

in the design.

There can be three choices for the floor base: dirt, wood, or cement. If you are building your coop up off the ground, even if only a few inches up, then the decision is made for you and a wooden floor will be the floor of necessity. Otherwise, you will need to make that choice yourself, taking into consideration budget, ease of cleaning, and maintenance as well as the spot where the coop will be built. Let's look at each floor type.

Dirt: The most basic of all floors, a dirt floor is an alternative for consideration, but not necessarily the best choice. Although it can be easy just to build a coop over a piece of ground, thereby turning that ground into the floor, a dirt floor can have a number of negative issues, with a main one being ease of cleaning.

It should be said that no matter what type of flooring you decide to use, it will be covered with bedding. The bedding will usually be straw, pine shavings, or a combination of the two. The bedding helps insulate the floor, especially in the winter to help keep the birds warm as well as soak up spilled water and chicken manure. As a result, the bedding will get wet and dirty. Part of the cleanup of a coop is removing the dirty litter and bedding and replacing it with clean bedding.

Once the dirty bedding is removed, the floor is usually scrubbed down, hosed down, and, if needed, disinfected before placing clean and dry bedding down. A dirt floor can make a full cleanup difficult, if not impossible, to complete. A dirt floor cannot be scrubbed down, and hosing will turn it into a mud pit. Should disinfecting be necessary, it is an impossible task. A dirt floor can also allow predators a chance to dig their way under and into the coop, as well as giving chickens, who love to scratch, an avenue to create their own escape route. Furthermore, with the fact that chickens do love to scratch, it can make the floor dangerous to you when they leave their little holes scattered around the coop, sometimes covered by the bedding. Finally, if the bedding begins to break down, it could pack down into a dirt floor. All in all, a dirt floor can work well in a temporary situation, but unless you have no other option open to you, it is not the recommended route to go.

Wood floors: Wood floors work very well in a coop, but as they are open to rot, it is a good idea to keep the floor painted using a nontoxic paint (treated wood may also be used, but only if it is a nontoxic

treatment; otherwise, it is best to stay away from it). Keeping the floor painted will help deflect dampness that will be present from spilled water, manure, and dirty bedding as well as wet birds coming in from the rain or snow.

Free-range chickens. Photo by hardworkinghippy under the Creative Commons Attribution License 2.0.

With wood floors, the thick bedding can easily be removed during cleaning, and the floor can easily be swept, scrubbed, and disinfected as necessary. However, a wood floor should be allowed to dry thoroughly before reapplying fresh bedding. If it is a sunny day, windows and doors may be left open to allow the sun to hit the floor inside, as the sun is nature's sanitizer, not to mention a big help in getting the floor to dry. For best drying results, wood floors should be scrubbed on warmer, rain-free days.

Cement floors: Cement is another reasonable alternative for a coop floor. Although it can be cold and hold dampness, thick and heavy bedding can alleviate that particular problem. Cement floors may be swept, scrubbed, hosed, and disinfected as needed, and easily so. One drawback, however, can be drying time. Unlike a wood floor, cement will not rot; however, it could crack or even crumble if not laid properly. Still, all in all, when properly cared for and insulated for the birds, a

cement floor can make cleaning easy.

Another option not on the list is the use of **hardware cloth** as a raised floor, which is like a very heavy screen. Some will like this method simply due to the fact that manure, spilled food, and water will go right through onto the ground. This type of floor, though, can be very hard on your birds' feet, to the point of discomfort. As a result, hardware cloth is not a favorable choice for your coop flooring. In the final analysis of chicken coop floors, the choice is up to you.

Installing Roosts in the Coop

Chicken coops will have roosts available for the chickens. A roost is simply a place for your birds to perch inside the building. A perch can be anything that you can figure out to put into use.

Although you may purchase large doweling for the roosts and attach it across the interior of the coop from side to side, you may be surprised at some of the found items that you may already have at home that will work just as well. Old tree branches can be used in the same way as doweling and can be cheap to replace when needed. They can also be cleaned pretty easily, but drying time may be an issue.

Another option, one I came to prefer, is old ladders. These may be single construction ladders leaned against the wall of your coop and securely fastened or fruit-picking ladders standing in the center of the coop (if you have room). I have also used the small aluminum bunk ladders that used to come with campers. Ladders can be a great perch, as they can hold many birds at one time, and they can be brought out for through cleaning when they begin to get covered in manure.

Some may think about using metal pipes. They are easy to

clean and easily found, but keep in mind that, especially in the cold weather, the pipes will hold the cold, making it uncomfortable for the birds.

When it comes to a roost, you can pretty much use your imagination. Just remember you need to keep your birds' safety and comfort in mind as well as the ease of cleaning for you.

Hens roosting on a tree branch. Photo by Living Off Grid under the Creative Commons Attribution License 2.0.

Cleanup Time

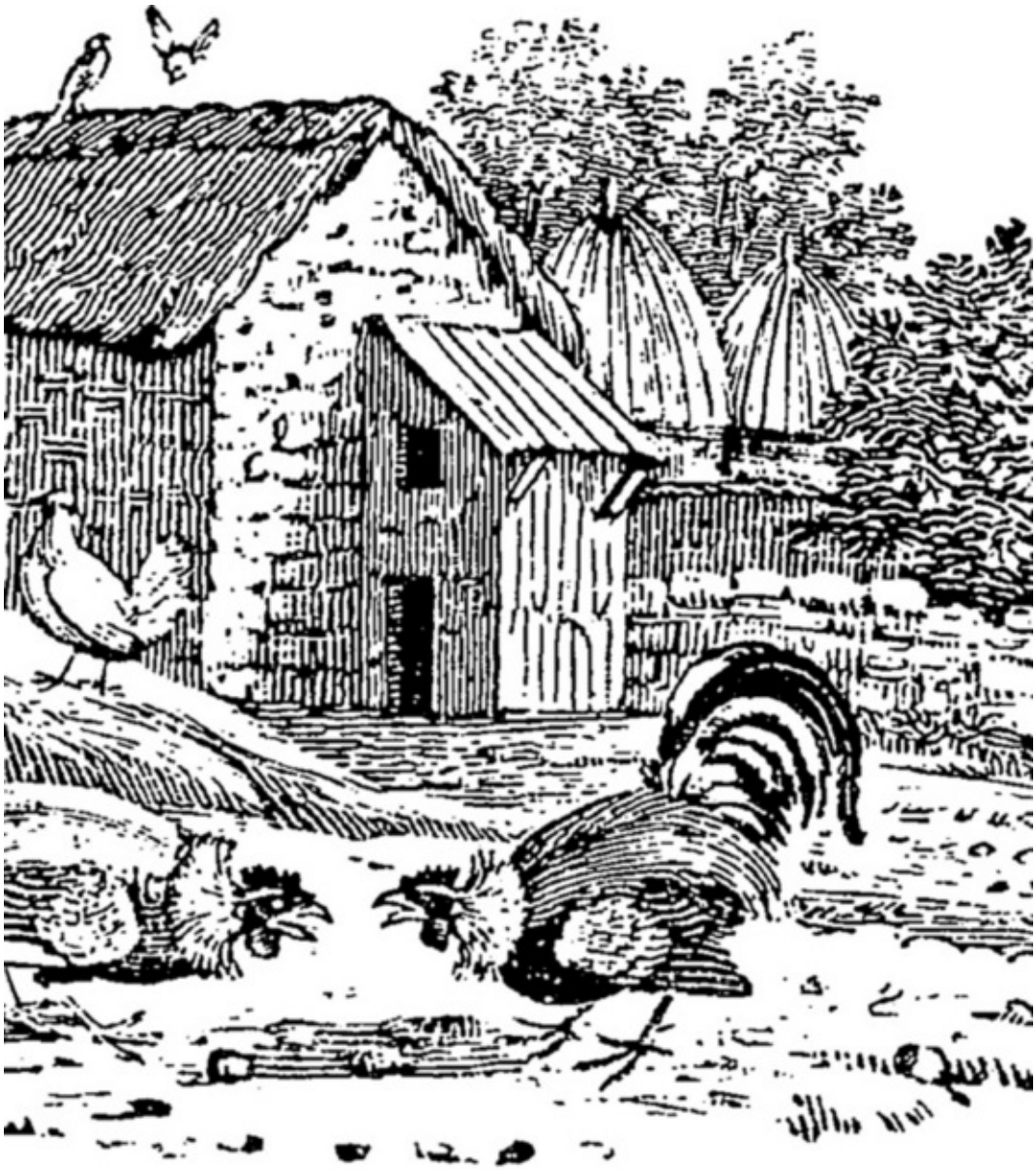
One more thing to consider when making the final decision as to how to keep your birds is providing for their general upkeep. Part of keeping livestock of any kind is cleaning up after them, and the easier you can make that part of the job for yourself, the less you will dread this all-too-necessary part of keeping your chickens. But don't let yourself believe that you can choose one method that will allow you to escape cleaning. No matter what housing method you choose, you will still end up with cleanup duties in some form waiting for you. The housing method that will most likely end up being the most work is the containment method. As the birds are always indoors, there will be lots of feces and dropped

food to keep up with as well as dirty litter and shavings. And as the small keeper or homesteader typically does not use automated food distribution or self-watering lines, there will most likely be spilled food and water to keep cleaned. Because these birds are indoors 24–7, upkeep of confinement housing can be quite labor intensive.

A bit less labor intensive, but still involving quite a bit of work, is the free-choice housing method. Because the birds have "free choice" of whether to be indoors or out, your birds will likely choose to be out as much as possible. As a result, the coop will not get quite as dirty as it would with total containment. However, in bad weather or at night, the birds will (and should be) shut in, so there will still be plenty to clean up. Plus, the outdoor pen area will need to be cleaned up as well. But as this area will most likely be bare ground (even if there was grass there when the pen was built, your chickens, due to being confined in the pen, will make short work of the grass and make it disappear rather quickly), cleaning the outdoor pen will usually consist of raking the ground clean of manure, shed feathers, and spilled food that the birds have not eaten.

Free-range or pasturing is probably the least labor intensive as far as cleanup is concerned. With pasturing, there will be no pen to clean up (unless you connected a small pen to their coop). In addition, there will be only minimal coop cleaning required, as the birds will still sleep in the coop, and may spend inclement or dangerous days indoors. Although, while you will get away without pen cleanup, the coop can still get plenty dirty from the night's roosting.

While deciding which method to use to keep your birds, it will come down to space, personal choice, and, if you plan to market eggs, the consumer demand for meat or even chicks. All methods work, with some better or more favored than others. However, when making your final housing decision, keep in mind that a happy, healthy chicken is a productive chicken, which, in turn, creates a happy owner.



CHAPTER 4

FEEDING YOUR FLOCK

Feeding and watering your birds are quite obviously other very important elements in keeping your birds. Fresh food, water, grit, and calcium are all essential to the health and well-being of your birds as well as to their production, no matter what you are raising them for or how many you have.

Feeding the Flock

Due to the convenience involved, most backyard or small homesteaders will purchase prepackaged commercial feeds, of which there are various types for the different stages of the life of a chicken, beginning with **chick starter** (there is no difference in appearance in the feeds, but they do differ based on composition/protein percentages). Chick feed is a bit more finely ground, although you can get adult feed finely ground as well. While this is fine to use, you should make sure that the food is fresh. If you open the bag and find it to be moldy or wormy, do not feed it to your flock. If you just purchased the bag, return it to the feed store. If it has been hanging around the barn for a while, it should be disposed of (composting it is fine, provided that the birds cannot get in to eat the spoiled food).

Chick starter is very finely ground feed, prepared in such a way that the small chicks can easily consume it. You can purchase either

medicated or **nonmedicated feed**, with the former being used as a prevention for coccidiosis. Coccidiosis is a commonly found protozoan parasite that is present in most chicken yards/pens. Although I do not like to continually give medicated feeds to my chicks, I will give it to them for the first few weeks, and then put them on a nonmedicated starter. This has worked well for me and been a good compromise. Some hatcheries can also now vaccinate for coccidiosis; in this case, medicated feed is not necessary. Having the chicks vaccinated may cost a bit extra; however, if you can afford to do so, it will save you a step when you take over their care.

Chick feed. Photo by okalkavan under the Creative Commons Attribution License 2.0.

The chicks should be on starter for the first six weeks of their life. Starter feed is 18–20 percent protein and gives the chicks the boost they need during the first few weeks of their lives.

From approximately seven weeks on, the next feed step is **grower**. This food is 14–17 percent protein, with a higher protein grower being fed to the birds up to the age of 14 weeks and the lower protein from 14 weeks on. Note that the food is also called "**grower/finisher,**" due to the fact that meat birds will stay on this until slaughter, as will younger birds and roosters you may be keeping for breeding. It should be mentioned that birds may be kept on starter feed. However, this is a

more expensive option, and the birds may end up getting a bit heavier than you would want them to be. Some may choose to keep older birds on starter just to finish up a bag of food. Again, this is perfectly fine and will not harm the birds.

Layer feed is for the hens that are of laying age or are currently laying. This food will be 16–17 percent protein. Along with layer feed, the hens should be given extra calcium for stronger eggshells. Calcium will normally come from crushed oyster shells, and may be purchased at most feed stores. Eggshells may also be finely crushed and mixed in as well, but make sure they are crushed into fine pieces. Calcium may be freely given to your hens in bowls, scattered on the ground in the pen (giving them something to do) or even mixed in with their food. Use a combination of methods to ensure that your birds get the calcium they need one way or another.

Grit

Your birds will also need **grit** to aid in the digestive process. The food the bird had just eaten will go into the gizzard, where it will begin a grinding process. The grit aids in this grinding process, making for easier digestion. Made from crushed granite, it too may be purchased at most feed stores. Grit should also be made freely available to your birds. Free-range/pasture and, to an extent, free-choice birds will find their grit on the ground while foraging; however, it is still a good idea to make some available to them either in a bowl, bucket, or, if they are in a pen, scattered on the ground.

Custom Mix Feeds

Although all chicken feeds may be purchased prepackaged, some feed stores will, if you are lucky enough, bag their own blends fresh, even using local grains, if available. Custom mixing will ensure you a fresh bag of feed rather than one that has sat on a loading dock and in a truck before making it to the store. It may also allow you to have a little more control as to what goes into the mix. Of course, each type of feed pretty much has its own recipe, but the feed manager may be willing to work

with you to customize your feed a little more. Buying this way may also allow you to purchase in bulk. Some mills will even give you a small discount if you return with your feed bags to be refilled. While custom-mixed or fresh-mixed feeds may (or may not) cost more than a prepackaged commercial feed, if this option is available, it may be well worth trying.

Hen and chicks feeding. Photo courtesy of Amy Kolzow.

When looking at feed, keep in mind that if you are raising certified-organic birds, be it for eggs or meat, you will need to make sure that your feed is certified organic, too, per organic regulations. Again, your feed manager should be able to assist you.

Some flock owners prefer to mix their own feeds, even going so far as to purchase whole grains and grinding them themselves. Yet this is very time-consuming and requires careful precision: you need to make sure that you have proper measurements and proportions as well as any necessary vitamins and minerals so your fowl get the correct nutritional balance. If you do want to go the fresh- or custom-mix route, having a

feed store or mill that can do it for you is the best way to go, as it will have the resources for proper measurements, ratios, and large batch mixes.

Commercial Feed

The common denominator in most commercial feeds is corn, oats, wheat, and barley, all of which are for energy. From there, it is helpful to look at the tags that come on commercial feed bags to compare ingredient ratios, vitamin percentages, and additional ingredients. Don't be afraid to ask your feed dealer to walk you through the differences between the various foods and their benefits to your birds. You can even talk to them about differences in brands, their own personal preferences (if they have birds), and why.

When putting together custom mixes, it is best to work with a dealer who is familiar with proper nutrition, ingredients, and their percentages as well as being able to create a proper nutritional balance in the feeds, which is very important to the health of your birds.

Bottom line is if you are new to keeping chickens, work with those who can assist you in obtaining the proper nutrition for your birds. If one dealer is too busy to assist, move on until you find someone who isn't too busy.

Talk with more experienced bird owners and listen to what they recommend. Just because something works well for them does not necessarily mean it will work as well for you, but it can be a step in the right direction, if not the exact direction you are looking for.

It should be noted that, although you can decide to raise your birds certified-organic, unless you are intending to sell lots of eggs, meat, chicks, or replacement stock, it may not be worthwhile. Certification is expensive (usually a minimum fee of $500 per year) and entails never-ending paperwork that must be meticulously kept on an ongoing basis.

As a result, most small chicken keepers choose not to become certified, even though they may follow most or all of the requirements for certification. Also, while you will not be able to label your products as certified organic, you can tell your customers that you follow organic-certification requirements, though, due to excessive costs involved in the registration process, you are not certified. Most, if not all, of your customers will understand and appreciate your reasoning, especially if you let them know that certification would force you to have to increase your prices to cover the costs of the certification fees and paperwork in order to sell them the same product you are selling now.

Forage and Supplemental Feeding

Free-range/pasture birds and free-choice birds will be able to provide for at least some of their nutritional needs through **foraging**. Free-range/pasture birds may even be able to get a large share of their food through foraging. While foraging, the chickens will feed on insects, greens, seed, worms, and other items they may deem tasty. Foraging birds do need to be protected from dangerous items they may find, such as glass, small nails, tacks, and other small and harmful items they could pick up and possibly swallow. You might also watch the yard and pasture for plants that could be harmful to your birds, such as burdock, buttercup, daffodil, elderberry, nettles, pokeweed, and many others. Due to this, it is helpful to do an occasional walk through your yard, pasture, or any other place your free-range chickens have access to as well as to check pens not only during cleaning but in-between times as well. Pens need to be checked, as small animals may drag things into them, birds may drop things flying overhead, and things may even fall out of your pockets or out of the equipment bucket when you’re doing some fence repair. It takes only a little time at the onset, and may save you and your birds a big headache and an emergency vet call.

If you have a garden that is pesticide-free, your birds will love the leftover greens. Use some caution, however, as not everything is good for them. Some strains of beans and even some herbs, for example, can be harmful. Also, watch that the plants have no mold or mildew on them. Any that do should be discarded. For the most part, garden greens as well as the leftover fruits and vegetables are a pretty healthy treat for your birds, no matter which method you use to keep them. Thick-skinned foods like melons, pumpkins, and squash should be cut in half for easier access to the flesh inside (see the Resources section for access to an excellent list of harmful plants).

Likewise, if there is a good bakery in your area, see if you can purchase their day-old or even two-days-old breads. The birds will love it, and it will be much better for them than prepackaged breads, as they won't be loaded with the junk that some of the store-shelf breads have. Break the loaves into pieces and scatter them or throw in a few whole loaves to give your birds something to break apart themselves and have some fun with.

Another occasional treat for the chickens is **birdseed**. Although it would be too expensive to make a steady diet out of, tossing in a cup of seed once in a while or letting free-ranging birds clean up around the bird feeder will be something they can really enjoy. If you are treating them to a predominantly sunflower-seed mix, the chickens can't really take the shells off the seeds, so make sure that, in this case, the sunflower seeds are already shelled.

Mowing the lawn? Your birds will love the clippings to both nibble on and scratch in. Again, your lawn should be untreated if you are giving your birds access, be it to clippings or letting them roam your entire lawn. And as with pasturing, make sure your clippings have no plants in them that can harm your birds.

Feed may be sprinkled on the ground to encourage penned birds and young birds to forage (as well as giving them something to do). It can be put in bowls, troughs, or feeders, though if you elect to use this approach, it would be best if the birds cannot climb into their food or tip it over, as either can allow bird droppings to get into the food. However, it will be easier to bring your birds in at night if you have feeders in the coop. It will allow you to do your second feeding when it is time for you to bring them in, and make it even easier if you do it the same time each

night. This goes not only for free-range (as discussed earlier) but for free-choice as well, as they will not always want to go in either, even though they are already in a pen. Eventually, your birds will be waiting for you or will come running when they see you head into the coop with the feed bucket. In the morning, you can feed them outdoors to encourage them to go out, although going outdoors usually doesn't require too much of a push.

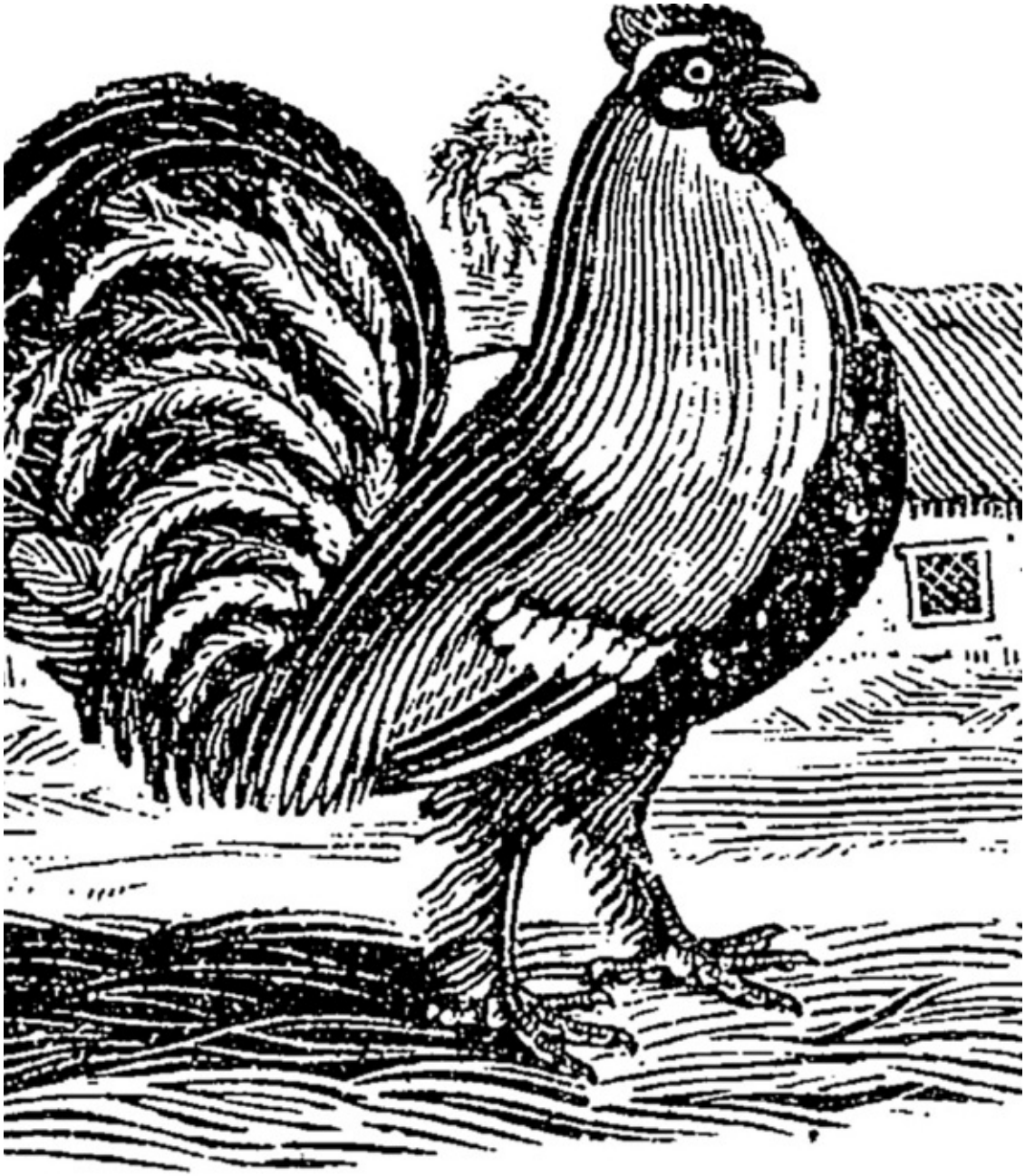
Watering

As part of your feeding routine, make sure that your birds have clean water at all times. **Refillable plastic self-watering vessels** may be purchased at any feed store at a very reasonable price. Their construction is ideal, as they can sit on the ground, but the birds cannot walk through the water, and chicks cannot drown in them. Chicks are very susceptible to chilling and dying if wet, and a water spot can be one of the most dangerous encounters your chicks can have. Even a bowl with less than an inch of water could be deadly to a chick, and can also become full of feces should your birds decide to sit on the edge of the bowl. Because the self-waterers have only a small narrow area where the water can come out into and sit, chicks cannot climb in, and larger birds cannot go to the bathroom in them. It keeps the water clean and enclosed, while keeping your birds safe, hydrated, and happy.

Chicks drinking. Photo by SMercury98 under the Creative Commons Attribution License 2.0.

There are various other types of systems, including the **drip system**, which can be purchased for watering birds. However, these would not usually be used with backyard chickens, and can run into a bit of money to build.

Good fresh food and clean water will play a major role in dictating the health of your birds, how their eggs will be (both for eating and hatching), and the quality of the meat. Feed and house them well, and they will feed you well in return.



CHAPTER 5

BREEDING

Although there are a number of ways to acquire new chicks and birds when you need them, such as at hatcheries, feed stores' spring-chick sales, and other farms, some owners will decide to breed their own stock for replacement, either when needed or to sell for profit.

While you do not need a rooster in order for a hen to lay eggs to eat, you *do* need a rooster in order to produce fertile eggs. This does not mean that the eggs look different or that they are no longer edible. The only thing that happens is that the rooster makes the otherwise infertile egg fertile and hatchable whenever you decide you want your chicks.

Depending on your wants and needs, you can breed purebred birds or hatch mixed breeds (just like you can have a mixed-breed dog, you can have a mixed-breed chicken). If you are raising for your own needs or to sell eating eggs and maybe some meat, then the purity of your chicken's breed really will not matter, regardless of which direction you take. Yet if you are looking to sell chicks or fertile eggs, or are even looking to get into showing birds at state and local fairs, you will need to look at raising purebred birds for at least as part of your flock.

Young Dresdner rooster. Photo by magnetismus under the Creative Commons Attribution License 2.0.

It is usually recommended to keep **one rooster for every 8 to 10 hens**. I try to keep my ratio at or near 2:10 for two reasons. The first is, in the case that I have lost one rooster, I will still have another, so I can keep my breeding plan going. The second is to ensure that my chicks are not all fathered by the same rooster. Although, technically, you can go up to six or seven generations inbreeding poultry before you begin to run into health issues with the offspring, I prefer to stave off having a completely inbred flock, if possible.

When first trying for fertile eggs, you will obviously need to put your rooster in with the hens with which he is to breed. Of course, the rooster can be in with the hens continuously, which is what most small homesteads and backyard chicken keepers will do. However, if you want to control the breeding and which hens are bred with which roosters, you will need a pen for each rooster that will be big enough not only for him, but his hens as well. And don't forget the nest boxes for the hens to lay their eggs in. Breeding can begin as soon as a hen begins to lay eggs.

Photo courtesy of Amy Kolzow.

When seeking fertile eggs from your hens, the **first two weeks' worth of eggs** after introducing the rooster should not be counted on to be fertile. This is not to say they are not, but it can take up to two weeks for fertile eggs to be continually produced by a hen (these eggs can and should be taken for eating, though). It also works the other way around. If for some reason you no longer want fertile eggs, or you want to finish your breeding season with a different rooster of unrelated offspring, you need to give two weeks after the removal of the rooster (or the first rooster) before you can be certain the hen's eggs are no longer being fertilized by that particular rooster, and that the eggs are definitely being fertilized by the new rooster.

CHAPTER 6

INCUBATION

Once your hens begin producing eggs, you will need to decide how you want to hatch them.
There are three options for incubation:

- Using an incubator
- Allowing the hen to hatch her own eggs
- Using a brooder hen (also known as surrogate brooding)

Incubators

Many backyard flock or small homestead owners will use an **incubator** to hatch their eggs. The incubator may be small enough to sit on a tabletop or as large as a refrigerator, although this is usually too large for the small flock owner. Some will even make their own incubators from wood, glass, and a light bulb. (There are numerous plans online for simple incubators. See the Resources section for examples.)

Chicks in an incubator. Photo by Dave Lindblom under the Creative Commons Attribution License 2.0.

One reason for using an incubator to hatch your eggs is that it will allow you to keep your layers in production. This is especially important if you are hatching chicks to sell. Once a hen begins laying, if you don't collect the eggs, at a certain point she will "go broody" and begin sitting on and incubating her eggs. When the hen goes broody or gets ready to set, she will stop laying eggs and concentrate on the eggs in her nest, hatching them out. There is no set number of eggs that will make her go broody, but once she stops laying, she will not start again until her clutch of eggs are hatched. Collect the eggs daily, store them pointed end down at a temperature of 55˚F in a cool and humid area, and rotate the eggs daily. When you are ready to incubate, allow the eggs to come to room temperature, write the start date for incubation on the eggs, and place in the prepared incubator.

It is advisable to do a little in-depth reading about incubation before diving in as well as reading the manual that comes with your incubator (if a purchased piece) well in advance of the time you plan to begin incubation of your first clutch of eggs.

Here are some basic steps to keep in mind:

- Make sure the incubator is clean. If you are using a new machine, it should still be cleaned. If you are putting an already used incubator to work, then it should be thoroughly cleaned and disinfected. If you

live in a bright sunny area or have a very sunny day when cleaning, let the incubator dry outdoors in the sunlight; the sun is nature's sanitizer.

- Make sure the incubator reaches and stays at the correct temperature *before* you put in your eggs. Plug it in, and then let it heat up and sit for 24–48 hours with a thermometer inside (unless it has a built-in thermometer). Thermometers designed to sit inside an incubator may be purchased at feed or pet stores.
- Make sure the eggs are clean. There should be no dirt, feces, or mud on the eggs. If there is some light dirt, gently and carefully clean them with a soft cloth or run them under warm water and gently use your fingers to remove any debris.
- Do not rub the eggs, as the shells have a light, invisible film that acts as a protection for the egg, and that should remain intact if at all possible. Dirty eggs that you cannot clean should not be placed into the incubator, as they can introduce bacteria into the incubator itself as well as to the hatching chicks.

After you have cleaned and checked the incubator and have the eggs ready, use a fine-tip permanent marker to mark each egg with the date it enters the incubator. This step will be invaluable in helping you keep track of when the eggs went in, especially if you add new eggs to the incubator (which should then be marked with their entry date) days or even a week or two later. Also, if you put eggs in at different times, you will know which eggs you should be expecting to hatch at any given time.

Incubation time for chicken eggs is 21 days, although chicks may hatch a little earlier or later, but not too much later. If an egg does not hatch a few days after its hatching date, it most likely will not hatch at all.

If you are using a **still-air incubator** (an incubator without a fan inside to move the air around), the incubator temperature should be 101.5°F. If your incubator is a forced-air device (if there is a fan inside moving the air), the temperature should be set at 99.5°F.

The incubation chart on the next page shows the incubation

information for chickens as well as other birds. Notice that if temperature and humidity needs are the same, you may hatch different species at the same time. Also note that this is based on a forced-air incubator. For a still-air device, add approximately 2˚F to the temperature. Humidity is measured using a wet-bulb thermometer.

Incubation Chart

SPECIES	INCUBATION (# of days)	TEMPERATURE (˚F)	HUMIDITY	DO NOT TURN AFTER	HUMIDITY (last 3 days)	OPEN VENT MORE
Chicken	21	100	85–87	18th day	90	day 18
Duck	28	100	85–86	25th day	90	day 25
Turkey	28	99	84–86	25th day	90	day 25
Goose	28–34	99	86–88	25th day	90	day 25
Muscovy Duck	35–37	100	85–86	31st day	90	day 30
Coturnix Quail	17	100	85–86	15th day	90	day 14

(This table contains only a sampling of some of the more well-known birds.)

Humidity

Humidity is very important to the incubator and to the hatching. For example, too much humidity can cause the chicks to die in the shell, even though they pipped (started to break open the shell). You can also get chicks that are too soft and sick.

If there is too little humidity, the chick may stick to the shell, making it impossible for him to move around in the shell to pip or peck his way all around the egg, or if he does hatch, the chick could be frail.

To keep track of the humidity in your incubator, a wet-bulb thermometer, also known as a **hygrometer**, is essential for your incubator. Some incubators will come equipped with one; however, if yours does not, one may be purchased at feed stores, online, through hatcheries, and even at many pet stores. If your hygrometer does not measure in Fahrenheit (as the above chart shows), then the humidity for

chickens should be as follows:

- 40–50 percent for the first 17 days
- 70 percent from day 18 to hatching

Humidity can be adjusted through the careful addition of water to the incubator. Put water on a small plate, and place in the bottom of the incubator. If humidity becomes too high, remove some of the water. A soaked sponge on a plate works well too, and helps in preventing accidental spills. Vents on the incubator may also be adjusted to help in humidity control.

Hygrometer. Photo by Sally E J Hunter under the Creative Commons Attribution License 2.0.

Turning the Eggs

The eggs will need to be turned at least three times a day. If the incubator has an **automatic turner** that the eggs sit in, this step will take care of itself, although you should still monitor them closely in case of failure. The turner will do just as its name suggests: it will very slowly turn the eggs on a continual basis day and night. However, many incubators, especially small tabletop pieces, do not come with a turner. For some, you may purchase a turner separately. If you cannot or choose not to purchase a turner, then the turning is up to you.

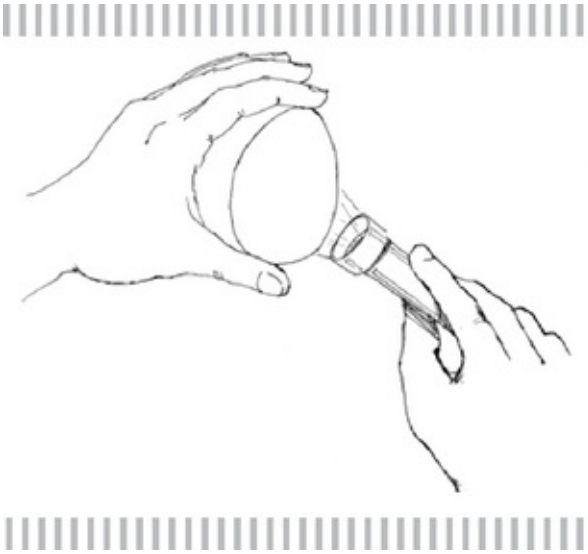
Turning the egg is as simple as rolling the egg slightly until, by the end of the day, the egg is back facing up again. This is where dating the

egg comes in handy. When the date is facing up again, the egg has done a complete rotation for the day. As it can be very easy to forget to turn the egg, using the date mark as a reminder is a simple, but still not foolproof, way to help.

Candling

During the incubation process, many like to keep track of the embryo development. This can be done through candling. **Candling** is the act of using light to look inside the egg. The egg is held up against a light source (now lightbulbs are used, though the process takes its name from a time when a candle was used), allowing the viewer to see inside the egg (similar to a shadow x-ray) and tell what is going on. This allows you to see not only how the chicks are progressing, but also if any of the eggs have never developed, allowing them to be removed from the incubator. (Eggs that are not viable and do not develop risk exploding in the incubator. This could lead to bacteria, compromising the other eggs if not thoroughly cleaned up.)

Some will hold the egg up to a lamp; some find success in using a strong flashlight. You can purchase candling equipment, but you can also make candling boxes. There are number of websites with directions on the construction of some of this equipment. They are usually very simple to construct, oftentimes using found or inexpensive materials.



Candling. Illustration by Ariel Delacroix Dax.

Hatching

On or around day 21, hatching should commence. Once the chicks are full-term, you may see the eggs wiggle a bit on their own. This is just the chick moving around within the shell. You may also hear tiny chirps or peep sounds accompanying little taps. Again, this is the chick getting ready for—or beginning—the hatching process. It is at this point when you should refrain from turning the eggs any longer. If you are using an automatic turner, it needs to be shut off. You may also begin to see little cracks or holes start in the shell in the following days. This is the chick beginning to break out or pip. When this stage begins, it may take hours for the chick to free itself.

The chicks are able to break through the shell using their egg tooth.

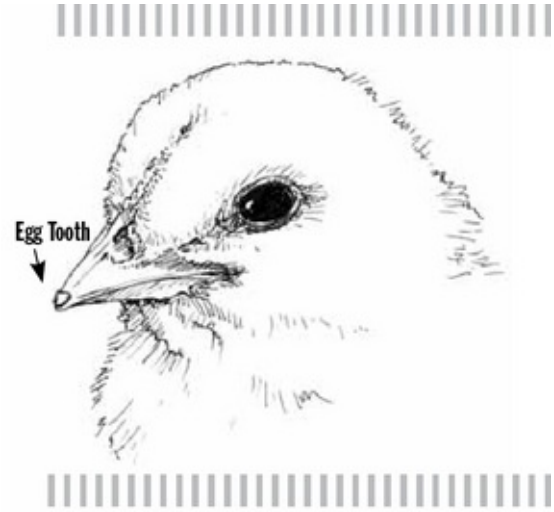
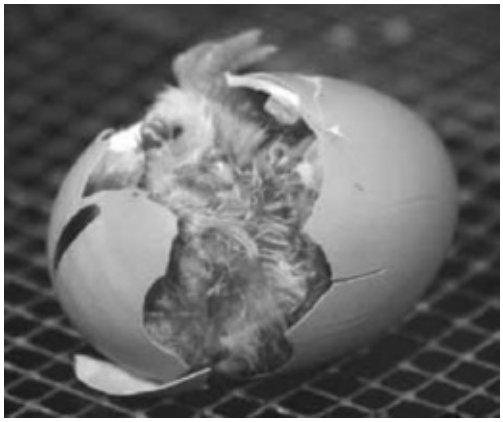


Illustration by Ariel Delacroix Dax.

An **egg tooth** is something that all chicks are born with and that disappears rather quickly (not long after birth) as the beak grows. It is a small extension of their beak that they use like a little pick to chip their way out of the eggshell. The process is slow, and you may be tempted to assist if the chick runs into problems. Some chicken owners will assist (carefully), while others feel that if a chick is too weak to hatch, it is too weak to survive.



Chick hatching. Photo by grendelkhan under the Creative Commons Attribution License 2.0.

I take the assist road, but only if I am positive that the chick is having problems, such as if he stops trying to get out of the egg, stops pecking, or ceases moving for an extended period of time. This is tricky, however, as you have to remove the shell slowly and carefully without tearing the umbilical cord from the chick's body. Should this happen, the chick can bleed to death.

As the chick begins to break out of the shell, you will notice that he will be very wet. The chicks may need to remain in the incubator until they are thoroughly dry, at which time they should be removed to an additional piece of equipment called a brooder, where they will spend the next six weeks.

Brooders

The **brooder** is the piece of equipment used to house the newly hatched chicks and keep them warm, providing the necessary heat they will need for survival during their first six weeks. Brooders may be commercially made or homemade. You must have containment as well as a heat source and a way to control it either mechanically or manually.

An old baby playpen with a hanging light of which the height can be adjusted, along with some cardboard or a few baby crib bumpers that can wrap around the bottom of the outside of the playpen (10 to 12 inches high) makes a great homemade alternative. Assorted wattages can help lower the temperature (change to a lower bulb wattage as needed) as well as raising the lamp. The cardboard or bumpers along the bottom

sides will shield your chicks against drafts. The bottom of the pen should be covered with newspapers, and then covered again with a thick layer of pine shavings. *Never* allow your chicks to walk on bare newspaper. It can be too slippery for them and will get wet quickly.

The brooder's temperature should be at 98°F for the first week that the chicks are inside, after which the temperature should be dropped 5°F per week until the chicks are six weeks of age. The brooder should always have a "cool spot" for the chicks to retreat to if they get too warm. This could simply be an area where the light does not hit too much, which will subsequently create a cooler area. (This should *not* be a cold area. It is a spot that may be only a few degrees cooler than under the light.)

As some of the chicks are placed in the brooder, they need to begin eating and drinking as soon as possible, with drinking being the most critical activity for the first few hours. Place a **chick-waterer** in the brooder if there is room enough. If there is not enough room, use a very shallow dish filled with a layer of clean, sanitized marbles, or small stones. Sanitizing can be as easy as boiling the marbles or stones for a short while. After the marbles or stones are in the dish, cover with water. The shallow dish filled with stones or marbles will allow the chicks to drink, but will prevent them from falling in, walking through it, or getting wet, while still allowing the chicks to get enough to drink.

For the first few days, I always add **electrolytes** to the water, following the directions on the package. You may purchase poultry electrolytes, but baby/child electrolytes will do the exact same thing and are cheaper. If you cannot get electrolytes or need some quickly, a sports drink such as Gatorade will also work. The electrolytes do the same for the chicks that they do for humans: it will help against dehydration and give a little boost that the chicks need for the first week.

Chicks in brooder. Photo by fishpickdiver under the Creative Commons Attribution License 2.0.

Chicks should normally stay in the brooder, with you gradually reducing the temperature for about six weeks, at which time they should have feathered out enough to be removed. However, should you think more time may be necessary, they may stay in longer.

Once the chicks leave the brooder, they will still be too small to throw right into the pen and coop with the general adult-bird population. You may want to consider setting up a temporary pen and small house right next to or inside your coop. This will give the chicks the opportunity to be with the flock in a safe way until they are big enough to hold their own. Once you are certain that you can put the chicks (or, by this time, **pullets**) in with the adults, it will be best to release the birds into the flock at night.

Mother Knows Best!

Another way to incubate your eggs is to allow the hen herself to go broody and sit on her eggs. When a hen goes **broody**, she will stop laying any more eggs and begin to spend the majority of her time on the nest, leaving only for food and water. If you believe that your hen is not leaving the nest enough to eat or drink, you may want to set some food and water near her so she can reach from her box.

To allow hens to set their own eggs, you will first need to discontinue

removing eggs from their nests. They will continue laying for awhile, and then at some point she will stop. Don't look for any particular number of eggs in the nests, however, as it may vary. Incubation time will run the same as with the incubator, and the hens will turn their own eggs.

Don't be too concerned if you do not see your hens off the nest; they will sit for hours upon hours during this period, and you may or may not see them get up and walk around. Be assured that they are getting up, but if you just don't feel comfortable, this is the time to put the food and water by them, if for nothing else than to put your mind at ease.

When the chicks begin to hatch, they may not all hatch at once. They may not even all hatch the same day, although it is usually only a difference of hours, usually within a 24-hour period once hatching begins.

When the hen hatches her eggs, she will take care of the chicks, and there will be little for you to do but sit, watch, and enjoy. She will also protect the chicks from other adult birds that may try to go after the chicks. Again, you will need to be mindful of water sources while the chicks are small, just as you would need to if they were in a brooder, using chick waterers or the marbles or stones in shallow dishes. Electrolytes may still be added to the water, as they will not hurt the adults in the pen.

After a while, you will notice your hen beginning to lay eggs once again. I normally would not let her set again until she is done with the current chicks or until they are at least six weeks old. However, if you want more eggs hatched by the hen, but also want to keep your hen laying, a surrogate brooder hen may be your answer.

Hen brooding. Photo courtesy of Amy Kolzow.

Surrogate Brooding

Using a **surrogate brooder hen** is an excellent way to give you the best of both worlds: hatching your eggs out under a hen the natural way, while keeping your layers in production. Silkies make excellent brood hens, as do older hens that may be a bit past their prime for laying, but who are still excellent mothers.

To use a surrogate, simply place the clutch of eggs under the hen. Sometimes, it is better to do this at night when the hen will be less aware. Some may place the hen in her own little pen so she can sit and brood without disturbance from the other birds. Once you figure out what works best for you and your hens, you can have an excellent system going for natural incubation without putting your layer out of commission.

Whether you use the actual mother hen or a surrogate brooder, incubating eggs in this fashion will save you time, as you will not need to be as attentive and hands-on as you may need to be with an incubator. You also will not have brooders to clean up afterward. Once hatched, the hen will care for the chicks rather than you being responsible for this task. Of course, you still will have to feed the chicks, and they should still have the starter feed, so you may want to keep the hens and chicks by themselves, as it will get expensive to feed starter to the adult birds of the coop as well, which you would have to do to make sure the chicks get their feed requirements. If you don't mind everyone eating starter for a few weeks, then you can leave everyone together.

Determining the Sex of Chicks

Unless you plan on selling chicks, it is not necessary to determine the sex of the chicks at such a young age. This can be tricky and, if not done properly could injure the chicks. If you do decide to sell your chicks, the easiest way to do so is to sell as a straight run. Straight runs are a random mix of males and females, the number of each and which is which being unknown. So, if you have 20 chicks and a customer wants to purchase 12 as a straight run, you simply need to pull 12 chicks out at

random.

Photo courtesy of Amy Kolzow.

There are ways to actually tell the sex of a chick. One method is called **vent sexing**. This involves checking the cloacal vent hole. However, if not done properly, the chick could be hurt. So, for the safety of the chick, this should only be done by someone who knows how to do it properly and can teach you how to do it correctly.

The easiest way to tell the sex of a chick is through **sex-link**. Simply put, with certain breeds, the male chicks are always one color while the females are always another. Or the males may have certain markings while the females have others. However, not all chicken breeds are sex-link, and if you want to go this direction, your selection of available breeds will be limited. An example of a sex-link breed is the Red Star, where the male chicks are a yellowish color and the females are red.

Of course, you can always wait for the young roosters to try their hand at crowing for the first time. The first attempt at crowing will sound, to say the least, different, and you may wonder what you are hearing. Yet,

as practice makes perfect, they will gradually sound more and more like real roosters. In the meantime, enjoy the practice sessions and begin sorting the boys from the girls.

CHAPTER 7

KEEPING AND CULLING

Whether you hatch your own chicks or purchase a straight run, chances are you will end up with more roosters than you need, or you may end up with some birds that are too weak or have some physical problems affecting their quality of life. As a hen gets older and stops laying, unless you are keeping a few for broody hens, you will be eliminating those from the flock. At some point, you may even find sick or injured chicks that you will need to take care of. Selecting who you will keep and who you will not is called **culling**.

Although most will associate the word "culling" with killing, this is not necessarily accurate. Culling simply means that you are eliminating animals from the flock. Of course, if the bird is hopelessly sick or injured beyond the ability to help it, then, for the benefit of the bird, it should be put down. Otherwise, when you cull your birds, you might sell them, give them away, or raise them for meat use when they get a bit older.

When culling, you do need to wait until chicks are half grown (unless the chick is sick or injured beyond help) so you can see what you have in terms of males and females, what they look like, their conformation (especially if you breed for show use), their physical appearance, and what your needs are. The longer you can keep the birds (at least until you have a well-trained eye), the easier it will be for you to decide who you want to keep and who you want to cull.

The best way to decide how to cull your birds and what to look for in birds you keep versus those that you cull is simply to learn about and know your birds. If you are keeping certain breeds, especially for show,

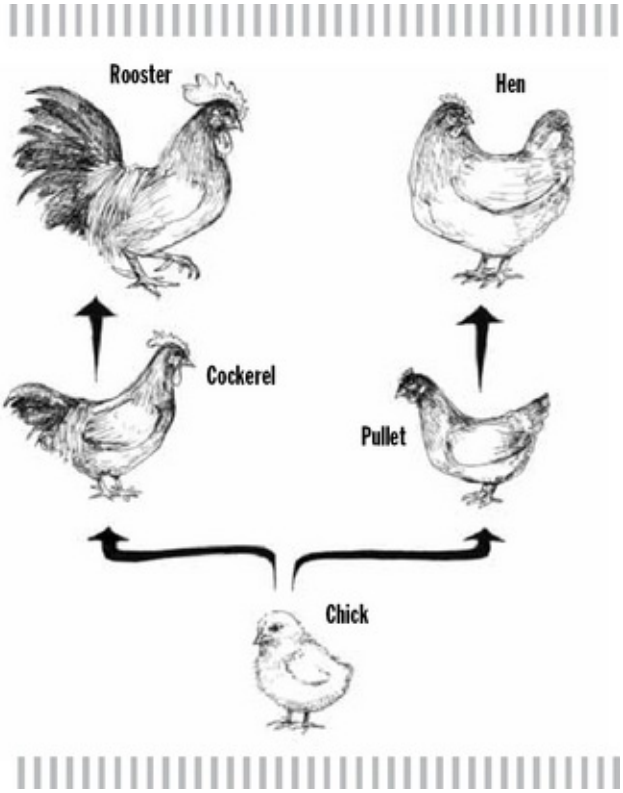
look at the breed standards, which can include color, size, and body proportion.

If your goal is to breed good meat birds, you will want to keep the biggest and the best in size. If it is for eggs, you will want to keep the healthiest looking, although you will not know how well they will lay until the hens become of age.

Another trait to look for is **temperament**. A nasty rooster can be a dangerous rooster, and dangerous roosters have been known to attack and do damage, not only to other birds, but to family pets and people. If you plan on really handling your birds for a long period of time and not just a few weeks for meat, temperament is very important for the good of both bird and human.

To clarify the growth that your chicks will go through, the stages are as follows:

- Chick: up to eight weeks
- Pullet (female): up to eleven months
- Hen: adult female
- Cockerel: young male
- Rooster: adult male of breeding age



Chicken growth stages. Illustration by Ariel Delacroix Dax.

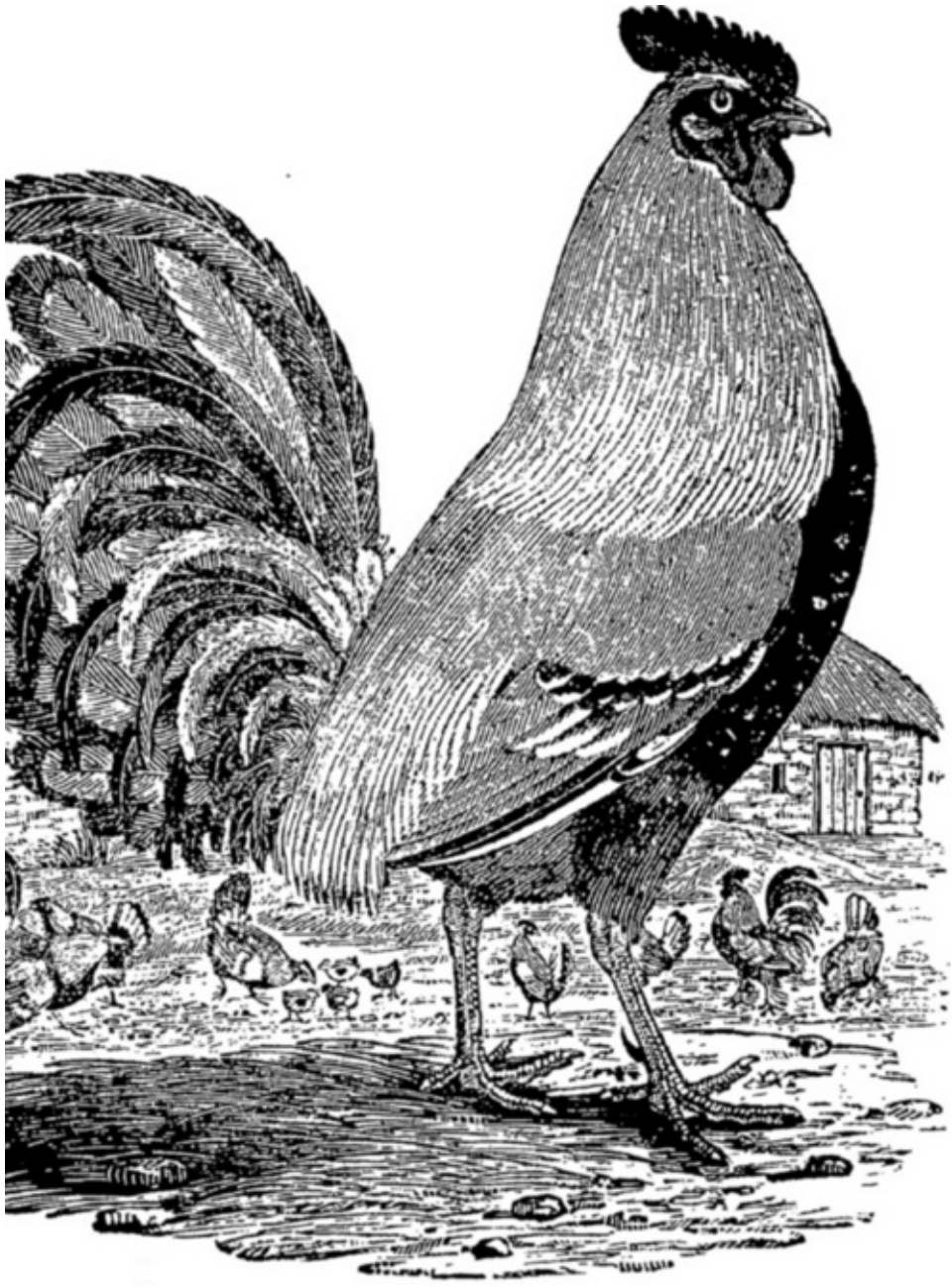
While pullets can begin producing eggs at 22 weeks, they are not considered hens until they are almost a year old. It is in the early stages of the pullet and cockerel age that you will begin to take a closer look at your birds for culling. It is also the stage at which they need to be if you are looking for some fryers for the freezer.

If you are unsure about culling a certain bird, it is better to wait until you are sure, so there are no regrets later. If you are not sure whether you are culling the right birds, it would be a good idea to contact someone who might be able to help you and show you what to look for as far as making the final culling decisions.

Should your culling require slaughtering a bird or putting a bird down (the difference being that slaughtering would be killing to eat, whereas putting a bird down would mean having to kill a bird due to illness or an accident that renders the bird unfit for eating), there are humane ways to take care of this situation. Someone who knows what they are doing and is skilled in having to take care of a bird by either slaughter or

putting down can handle a bird in a way that causes the bird little stress. However, if you do not know what you are doing, even the most humane method can be cruel.

If you need to either slaughter birds or put one down due to illness or injury, and you have not done so before, it is best for you (and the bird) to bring in someone who knows what they are doing, and then have them teach you the correct way to carry out the procedures yourself. Again, it cannot be stressed enough: do not cull until you are sure.



CHAPTER 8

ILLNESS AND DISEASE

Just as with all other animals and birds, chicks and chickens are susceptible to disease and illness, although generally the backyard or free-range birds will have far fewer problems than the contained birds. Many problems are the result of bad maintenance or husbandry, in which case the problems are totally preventable. However, sometimes things can happen no matter how clean or fancy or modern your facilities are, or whether your chickens have free-range or free-choice.

The following is a brief list of some of the problems chicks and chickens may develop as well as their causes and methods of prevention. Note that these are *brief* descriptions, meant only to give you some ideas. Should you begin to suspect that your chickens are sick, you should call a vet or experienced chicken owner before trying any treatments. This chapter should not be used as the last word or as a diagnostic tool.

Diarrhea

Usually caused by a bacterial infection, **diarrhea** in chickens may be fatal if it is left untreated. The wrong foods, such as spoiled meats or citrus and avocado skins, among others, may be the culprit.

Should chicks be affected, the vent area will need continual cleaning to prevent blockage (as in pasty butt). Older birds will usually not have this problem, as they will groom themselves. Yet they still should be checked often, just in case they are not cleaning themselves properly. Chicks need to be washed and should have access to a heat source to dry

themselves so they do not end up with further problems from being wet.

Older birds may be treated orally. Sometimes the “cure” may be as simple as feeding them plain organic yogurt. However, if the bird(s) still have diarrhea after 24 hours, other treatments will be necessary. These further treatments could be Epsom salts or potassium permanganate. Many sites that specialize in chicken health can provide the correct proportions/measurements. A vet visit may also be in order.

Prevention can be as simple as maintaining clean surroundings and food, although diarrhea may also be a symptom of a more serious problem. If a bird does have diarrhea and it is not due to another underlying illness, separate the affected fowl from the rest and put it in a warm, dry area until the problem runs its course.

Frostbite

Although not a disease or illness, **frostbite** can take a serious toll on your birds. The exposed skin areas of combs, waddles, and feet are susceptible to frostbite, and the resulting damage can be permanent.

Combs and waddles can become black and scabby-looking, while legs may be warm to the touch, with the birds not wanting to put any weight on their feet. Permanent lameness may also result.

Prevention is primarily through the careful choice of how you keep your birds in the winter. Keeping the birds in a warm, dry coop (especially on nights that are freezing) can help. They may still have a choice to go outside, but the key word there is choice. On very bitterly cold days, you may find they would rather be inside, and on dangerously cold days, you may want to make them stay indoors and not open the doors at all. Also, petroleum jelly may be rubbed on to combs and waddles (the red skin areas on either side of the beak) to help prevent frostbite in these vulnerable areas.

Heat lamps may be used, but if they get too warm and the chickens get accustomed to being warm, it could affect the birds’ ability to adapt to temperature variations as well creating a potential fire hazard in the coop. If in use, heat lamps should be used wisely and safely.

Gape

This condition is caused by the gapeworm, as it infests the trachea and blocks the airway. Symptoms may include coughing and shaking of the head. Treatment may include worming and the use of ivermectin. Prevention includes the proper management of the flock, including cleaning the coop with a disinfectant.

Infectious Bronchitis

Many problems that chicks and chickens are susceptible to are respiratory-related. **Infectious bronchitis** is a highly contagious viral disease. Symptoms include coughing, sneezing, and reduction (or even complete loss) of egg production, while another strain may attack the kidneys, with symptoms including a droopy tail. As this second strain usually involves kidney failure, death can occur quickly.

Infectious bronchitis usually is due to the introduction of a sick bird into the flock or at a show. It is always a good idea to isolate any new birds for a few weeks so, if there is a problem, it will not spread to your other birds. The same goes for birds returning from shows or fairs.

Although there is no treatment for infectious bronchitis, your birds can recover if they do not have the strain that affects the kidneys. As secondary infections may also arise as a result of infectious bronchitis (which can then result in the death of the birds), the entire coop may be treated with a water-soluble, broad spectrum antibiotic for a period of 7–10 days. It should be noted that this will be to help fight the secondary infections, and will not help with the bronchitis itself. Electrolytes should also be made available. Once the birds have made it through, there should be a full-coop disinfecting cleanup. Chicks may be vaccinated for infectious bronchitis as young as two weeks of age. However, as there are so many strains, it is not a foolproof measure of protection, but will nonetheless provide at least an additional layer of protection for the coop, helping with at least some strains.

Infectious Coryza

Another respiratory disease in chickens, **infectious coryza**, will show symptoms much like a cold, including coughing, sneezing, and nasal discharge (which will have a rotten smell to it). You may also see watery eyes, eyelids sticking together, and swelling in the faces. Eventually, the bird will stop eating and drinking, becoming lethargic.

Infectious coryza may be transmitted in a number of ways, but a few of the most common ways are contact with infected birds, contaminated food, and even from the clothing of those humans working inside the coop.

Cleanliness, proper disposal of dead birds, and caution working around infected birds will help in prevention. Although the mortality rate can be up to 50 percent, treatment of the entire flock with an antibiotic or sulfonamide may help.

Marek's Disease

A viral disease that is very common in chickens and is also highly contagious, **Marek's disease** can cause a high loss of birds. Marek's is found in droppings and secretions, and stays indefinitely within the feathers and dander that can be found in the coops and chicken yard. The disease will usually hit young flocks, with losses continuing throughout the lives of the flocks.

Symptoms of the disease are paralysis of the legs or wings, combs that turn pale and shrivel, weakness, blindness (usually in one eye), and diarrhea. The nervous system may also be affected. The chickens may show any one or more of these symptoms.

Although there is no cure for Marek's disease, vaccinations of day-old chicks will prevent it. If ordering chicks from hatcheries, they usually either will give you the option of having the chicks vaccinated or will automatically vaccinate them.

Newcastle Disease

Also called NDV, **Newcastle disease** is a contagious virus that can affect most species of birds. Spread mainly through direct contact between healthy and infected birds, it can spread rapidly within a confinement

situation and is almost always fatal. Transmission usually occurs through feces and excretions from contaminated birds as well as contaminated food, water, equipment, and clothing of caretakers who have been in contact with diseased birds.

Symptoms of Newcastle disease include, but are not limited to: sneezing, gasping, coughing, discharge (nasal), watery diarrhea, droopy wing, muscle tremors, paralysis, swelling around the eyes, and sudden death. Unfortunately, there may sometimes be no signs of any symptoms whatsoever.

Worse yet, there is no treatment for Newcastle disease. With that said, there has not been a known case of this disease in the United States since the mid-1970s. On top of that, there are vaccinations that may help prevent it.

Pasty Butt

If you are hatching or purchasing chicks, **pasty butt** is a common problem that you need to be aware of. Basically, pasty butt is chicken feces clogging the cloacal vent, preventing the chick from being able to properly excrete solid waste. Although easily taken care of, it can be fatal if not detected. The remedy is simply to clean the vent area. Using a soft cloth moistened with warm water, carefully and gently clean the area, which will usually solve the problem.

Before returning the chick back to the brooder or pen, his bottom should be thoroughly dried. Further prevention of pasty butt is easy through daily examination of the chick.

Pullorum

Pullorum is a bacterial infection, also known as *Salmonella pullorum*, the highest mortality from which usually occurs in two- to three-week-old chicks. The signs and symptoms include excessive deaths after hatching as well as in the shell, labored breathing, and diarrhea, which may also stick to the vent. However, flocks or single birds already laying may only show a reduction in eggs laid and in eggs that hatch.

Pullorum is usually transmitted through transovarian infected eggs

and hatched chicks that then spread the disease further. Treatment is usually done by testing the birds and removing the infected ones.

Scaly Legs

Caused by mites, **scaly legs** can be recognized by the scales on the bird's legs rising, instead of being flat against the leg. Although they may be a bit difficult to get rid of, scaly legs are rarely ever fatal (I've had a few birds suffer from it, and I've never lost one).

To treat it, some will rub petroleum jelly into the legs to smother the mites, using Ivomec, mineral oil, Sevin dust, etc. I have found that dipping the chicken's legs in vinegar (white or cider) usually does the trick. By its reaction, it most likely has stung the bird a bit, but it hasn't been as messy or sticky and greasy, and has been safe for both the bird and myself (as I would end up wearing as much as the bird sometimes). One person can do it, and it is an inexpensive treatment, using something you already have in the cupboard. Plus, should another bird come into contact with an infected bird, there will be no problem. Along with treatment, the coop should be completely cleaned, including laying down new shavings or bedding.

This is only a sampling of the diseases, illnesses, and other health problems that can affect your birds. Some are preventable through vaccines, hygiene, and/or proper management, while others are not as easily prevented. Some are curable and are just an annoyance, while others are fatal. Should you suspect that your bird or flock of birds is ill, as a new flock owner, it will be in you and your birds' best interest to consult with either an experienced owner or veterinarian. This chapter is meant only as a brief guide and not for determining an actual diagnosis or treatment.

CHAPTER 9

RAISING CHICKENS FOR EGGS OR MEAT

There are two primary reasons people keep chickens in the backyard or on the homestead: eggs and meat, with most backyard keepers raising birds for egg use. Nothing beats the flavor of a really fresh, just-gathered egg, especially when it comes from your own chickens. Although marketed as "fresh," many of the eggs purchased in grocery stores may in all actuality be up to three or four weeks old by the time they hit the retail floor. Unless the eggs are being locally produced and purchased from the farm directly by the store, you're going to notice a difference right away between your own eggs and the store's. You will notice a difference in the white of the eggs, the color of the yolks (which will be deeper in color in home-raised eggs), and (it bears repeating) a noticeable improvement in the flavor. The shells may also be thicker with the home-raised eggs.

Although there is always a threat of salmonella from raw eggs, this is usually less of a problem in home-raised eggs, as living conditions for the chickens and the cleanliness of the coop are usually much better. Precautions should still be taken when consuming raw eggs, either on their own or as part of a recipe, like Caesar salad—or cookie dough.

Variations of the Egg

Even though eggshells may come in different colors—white and brown being the most common, but green, pink, orange, and other colors also exist—the color has no effect or influence on the flavor of the egg,

although some people do have their color preferences between the white and brown eggs.

Eggs will also come in different sizes, which may be due to either the size or the age of the bird that laid them. Young birds just beginning to lay will produce small eggs at the outset. Not to worry, though: within a short time, the eggs your birds produce will get larger and reach what will be their normal size. It is a good time to note that if you intend to sell eating eggs, you may have to sort sizes. This is done through a small, tabletop scale that, once the egg is placed on it, will tell you how to grade it: small, medium, large, or extra large.

Photo courtesy of Amy Kolzow.

Nutritional Value of Eggs

Although amounts may vary, eggs are high in essential vitamins and minerals, including vitamin A, potassium, and an assortment of B vitamins as well as proteins and antioxidants. Many of these nutrients are essential in nerve and brain health, although, like many foods, eggs do lose a bit of their nutritional value through cooking. Although eggs get a bad rap for cholesterol, they continue to be a source of healthy fat; one large egg averages 70 calories.

The Laying Hen

Although the best period of a hen's egg production is during the first two years after maturing, it can actually go on to lay for several more years. Keep in mind, however, that the number of eggs produced *will* slowly begin to decline regardless.

You will normally get **five to seven eggs per week** from each of your hens. However, as the days get shorter, egg production will also decrease. For this reason, many producers will put a light on for the birds for part of the evening, extending their "daylight" time artificially. Expanding their "daylight" time will usually keep the hens laying. Yet there are other things that may affect laying time for your hens. Stress, illness, and inadequate water/food are among some of the common problems that may reduce or stop a hen from laying altogether. These problems, though, once identified, are easily corrected. Once she gets back on track, the hen will naturally begin her laying pattern once again, and will pretty much return to normal.

Nest Boxes and Egg Gathering

Your hens should have nest boxes for laying. These are basically little cubbies, either built into the walls of a coop or hanging securely from the walls. If you do not have nest boxes built in, and purchasing hanging ones are not in the budget, there are other options. Securely stacked crates with their openings facing out will make good nest boxes.

Chickens in nest boxes. Photo by normanack under the Creative Commons Attribution License 2.0.

You should definitely make sure to attach some sort of lip in the bottom of the opening to keep the eggs from rolling out. Ideally, they should also be off the floor to make it more difficult for mice, rats, snakes, possums, and other predators to gain access. The crates should also be attached to each other as well as to the floor to prevent their falling over. While wooden crates may be used, plastic crates are much better, as they can be cleaned, disinfected, and sanitized easier than a wooden crate. Some hens might take up residence in a bucket on the floor, while others may claim an empty box that they find lying around, although a cardboard box can get wet and smelly. Keepers who have only a few birds to care for may create nesting spots for them in the center of old tires by laying them on the floor and filling them with straw. All nest boxes, no matter what you are using, need straw bedding. Shavings will work in a pinch, but will get dirty and smelly in a shorter amount of time.

Although you may have a nest box for each bird, don't be surprised to see birds sharing a nest or nest box. This is not abnormal, and you may find both hens sharing setting time, should you decide to have your birds hatch their eggs or a surrogate hatch the eggs.

If you want your hens to hatch their own eggs, simply leave them in the nest. Otherwise, they will need to be collected daily, sometimes even two or three times a day, depending on how many birds you have and when they lay, as your hens may tend to lay at different times from each other. Once the eggs are collected, they will need to be stored, and how you store them will depend on what you are planning to do with the eggs.

If the eggs are intended for eating, they can go right into the refrigerator. If you are planning to hatch them, either in an incubator or by a surrogate broody hen, then they need to be stored in a cool, but not cold, area. A cellar is a good spot as well. The eggs should be stored in a carton (foam being the best, as paper may remove moisture from the eggs) and turned every few days. These eggs may be held for up to 10 days until you have enough eggs for either the incubator or surrogate. After the 10 days, while they may still be viable, the eggs will slowly begin to lose their fertility, which will affect hatchability.

When a Hen Eats Eggs

A bad habit that some birds may pick up is **eating their own eggs**. There are many reasons for a chicken to do this, including not enough space, eggs breaking, or there not being enough water available.

As eggshells are composed of calcium, it is fine to recycle your clean shells and use them as part of your birds' calcium supplement. Some may say that using shells as part of your chickens' calcium supplement program may cause the birds to start eating their eggs. However, if the eggshells are finely ground (not to the point of being a powder, but just ground into tiny pieces), and provided they are not thrown into the pen whole or in large pieces, this should not end up being an issue to be concerned with. Should you have birds eating their eggs, correct any management problems that you see in the coop or with the birds.

Another problem to look for is cramped conditions; if the chickens have too little space, you may start to see some of them eating their own eggs. Chances are if you are also seeing aggression among the birds, once you correct this mistake, you may see both the aggression and the egg eating come to an end as well as any pecking problems you might

have (birds pecking at each other). However, if you still have one hen who insists on eating her eggs no matter what, then she should be removed from the flock or culled.

From there, you have a few options available to you. You can always put her in the freezer, but if this is not the option for you, you can give her away to someone you know who is looking for a chicken (make sure to tell them why you need to find her a new home), or if you still want to keep her (maybe the kids want a pet), give the hen her own little house and run. She may still eat her eggs, but the eggs of the other hens will be safe and she will not pass on her bad behaviors to the other hens. It may also be possible, while the hen is separated from the others, to focus on helping her break her habit. Collect her eggs regularly and replace them with a wooden egg (if you purchase an unfinished wooden one at a craft store, paint it with a nontoxic paint first, so it can be washed and disinfected after each use), a plastic Easter egg (glue the two halves together), or even a golf ball, so when she pecks at them, nothing will happen. You may find that, after some alone time with unbreakable egg substitutes, the hen may abandon her egg-eating habit and will be able to go back to the flock.

Selling Your Eggs

While it is possible to sell any excess eggs that you have, you need to check with state and local regulations concerning this. Some areas will allow you to sell eggs out of your home, at the market, or just about anywhere without a permit. However, other areas may demand a permit for certain types of sales, while others do not allow any egg sales without a permit. They may have other rules and regulations concerning egg sales as well. As a result, before you begin creating a market for your eggs, check with you local extension office, as they should be able to properly direct you on selling your product.

One tip that you need to keep in mind, whether or not you need a permit to sell, is to make sure your eggs are picture-perfect: no dirt, no cracks. You can have all the permits necessary to sell, but if you do not present a quality product to your customers, they will not purchase.

Meat Birds

You can raise chickens that are explicitly for meat use, or you can use dual-purpose birds. You can also use your culls of any type or breed as meat birds.

Birds that are raised mainly with meat in mind will be a larger-built bird, normally ready for slaughter in only a few months after hatching. When selecting birds to keep for breeding use, it would be appropriate to select the large, healthy, and hearty birds to keep the preferred traits going.

When raising birds for meat, the best method is through freerange or free-choice. With either method, the birds get fresh air, exercise, and can forage for at least some of their foods, all of which will result in better birds for eating.

Prior to slaughter, the birds should be removed from all food for 24 hours, but water needs to remain. This is due to the fact that it is best for the birds to have a clean intestinal tract when slaughtered, and lack of food with as much water as they want will aid in this.

At slaughtering time, there are a few ways it can be done, including a killing cone, breaking the neck, or the old-fashioned chopping block. Or, if you have a slaughterhouse in the area that will do poultry, you may take that route as well. However, if you can do it or have it done at home the right way by an experienced person, it will actually be better for the birds. They will be under less stress, and you will be guaranteed a humane slaughter, as it will all be under your control. It is good to note that the less adrenaline running through any animal at slaughter time and the less stress on that animal, the better the meat will be.

It should be said that slaughter time is not a one-person job, especially if you are slaughtering a large number of birds. After the initial kill is done, the birds will need to be bled, and then plucked, with innards removed and the processed bird immediately put in a cooling area or ice bath. From there, the birds may be properly wrapped and frozen for future use.

If you are considering selling processed birds, you will need to check state regulations before proceeding. Some states will let you process a certain number of birds on your farm to publicly sell without USDA inspection or involvement. Some may require the use of a fully inspected

facility if you are selling the meat. If you are selling to the public and are in a state where use of an inspected facility is necessary, should you be in the vicinity of a slaughterhouse that can do poultry, and you are comfortable with the work that they do and the way they handle the birds, this could be the easiest option to take, especially if you are new to raising and selling meat birds.

Don't be afraid to ask to check out a facility before you commit to taking your birds there. As a good steward, you will be concerned with the quality of your birds' lives right up until their deaths, and you will want their deaths to be respectful, humane, and quick. Anything less at slaughter time, and all the care you put into your birds' lives could be negated at their deaths. As more and more consumers care about not only animals' lives, but animal's end of lives as well, the way the birds are processed will be just as important as the way they lived.

CHAPTER 10

OTHER USES FOR YOUR CHICKENS

Although the two reasons why most everyone decides to keep chickens are for their eggs and/or meat, there are other things that your flock may do for you as well.

Fertilizer

It doesn't matter if you have two chickens or two dozen; one thing you will always have without fail is manure and dirty bedding. However, both the manure and bedding, be it straw or wood shavings, can be thrown right into your compost pile. Also, unlike most other manures that really need composting first, chicken manure may be put directly on the garden while you are prepping for spring opening or winter closing.

Insect Control

Chickens that have outdoor access or are allowed to freely range will love to go after the insects around the area. They will also pick at grubs and worms (although they do not pull worms out of the ground after "hearing" them as wild birds do), and you may also observe them going after mice when they see them running around. Sometimes you will get birds that will depopulate your garden of insects without harming the garden (through eating buds, pecking at vegetables, etc.). This will be a great help to you, especially if you are either gardening organically or

just do not want to use chemical pesticides.

Gardens

Let your chickens help you with getting the garden ready for the spring by digging it up for you. As soon as you can do so in the spring, either build a temporary fence around the area you want to garden or use a chicken tractor and move it around (a chicken tractor is a small coop with an attached small pen that can be hooked up to a tractor or rolled by hand from one spot to another with the chickens still in it).

The chickens will peck and scratch the area they are in, helping you to get rid of unwanted grassy or compacted areas, giving you a nice garden surface. They will also eat any grubs they dig up. If you are using temporary fencing and want the birds to prep a large area, fence just a small portion at a time.

When the birds are done, simply move the fence. While they are clearing the garden, your birds will also be fertilizing the soil—a time saver for you, and lots of fun for your chickens.

Using a chicken tractor in the garden. Photo by RJL20 under the Creative Commons Attribution License 2.0.

Pets

Chickens can make great pets. Whether hens or roosters, a chicken can be a lot of fun and a bit smarter than what you may think.

I had a pet rooster, Cuddles, named as such due to the fact that, as a

tiny chick, he loved to be taken out and cuddled by people. Cuddles had one little bad habit, though: he would crow every time I was on the phone. If I was talking to someone at the house, where he could still have my attention while I was talking, he would stay quiet and content. It was only when I was on the phone that he would start making his presence known in the loudest manner possible. Obviously, he was smart enough to recognize the various circumstances, learning that, in one instance, he would still get the attention that he felt he deserved, but, in the other instance, he would be "ignored," or so he thought, while I was trying to juggle the phone in one hand and paperwork in the other. More than once, I would have to explain the crowing rooster to the person on the other end of the line.

If you should decide that you want a pet chicken and don't care about gender, then it is best to select a chick and hand-raise him or her. If gender does matter, then you will need to either wait a little longer until it is apparent to you who is who, have someone determine a chick's gender for you (remembering that mistakes can still be made), or choose a sex-link chick.

If it is an adult bird that strikes your fancy, it is certainly not impossible to make a pet out of it. Just look at the temperament and personality of the bird. If it is a calm and friendly bird, it will not be difficult to make a pet out of him or her. Yet if their temperament is not good, be prepared to have to put the bird back into the coop, as a nasty chicken (especially a nasty rooster) can hurt you, or your family members, and other pets.

Show

One step up from keeping chickens as pets, many people will show their chickens, or at least a select few. Although 4-H and fairs are the most familiar venues to most of us, there are a number of other shows for poultry for the person who is serious about their breeds and shows, just as there are for other animals. Should you decide to show, be prepared for a lot of extra work both in terms of raising and caring for your birds, in addition to meeting oftentimes rigorous standards. What those standards are will depend on the breed of chicken. Some examples of

standard requirements your birds may need to meet are size, weight, color or markings, specific comb types, and leg color. There are many other standards your birds may be held to in order to be considered show quality. Most poultry organizations will be able to supply you with a breed standards list to which you will be required to adhere.

Once committed to showing, the birds will have to be meticulously kept. A scar, a broken toe, rough feathers, a chip in the beak, or any other imperfection or damage to the bird from poor management or even accidents can be enough to disqualify your bird from a competition, perhaps permanently.

Chickens at the fair. Photo by Montgomery County Planning Commission under the Creative Commons Attribution License 2.0.

Birds will need to be cleaned and groomed meticulously. Basically, a show animal is a lot of work. Yet it can also be lots of fun and very rewarding as well as open lots of networking doors with other breeders and chicken lovers, which will give you new places to buy or trade birds. In addition, these new contacts can serve as wonderful informational resources, and if you have some top show birds and become known for

them, then your fertile eggs, chicks, and even adults could demand a better market price. If you have the time and money to spend and have one or more good birds, it is worth the experience to show them, even if only once or twice at the local fair.

Feathers

The feathers from your chickens can be of use as well. Whether obtained through **molting** (when a bird sheds or blows their feathers) or through slaughter (when doing your meat harvest), you can find uses for them.

The feathers may be used for pillows, but so many are necessary that, unless you are plucking a number of birds, it may not be a project worth your while.

Crafters like to use the feathers as well, and if you don't use the feathers yourself, you can clean them well, sort them into sizes, and then package and sell them. If you have high-quality clean feathers, it could end up being a little value-added business with your birds.

Molting

Birds shed their feathers just like dogs shed their coats. Molting can also be called **"blowing feathers,"** and is the time when your birds will shed their old feathers for an entirely new set. It can be a stressful time for the birds, with the entire cycle usually taking about seven weeks.

Molting usually happens once a year, generally in the fall or after an extended laying period. Once molting begins, you will notice a sharp decline in a hen's egg production. Although this will give you a dry period as far as eggs for your table, this time will give your hens some much needed rest and rejuvenation, allowing her to build herself back up and renew nutrients that have been lost during the laying cycle.

Once molting begins, you may notice a definite pattern in the shedding of feathers, although there can always be exceptions. The order you will most likely observe is head, neck, breast and thigh, back, and then wings and tail. Your poorer layers will most likely start their molt before your better layers.

Chicks are born with fuzzy feathers, but will begin to molt about a week after birth. Photo courtesy of Jeff Smith, Cackle Hatchery.

It is worth noting that extending your hen's laying time will stave off molting. However, as your hen really does need the time off, it is best to allow her to go into her natural molt, so she can start fresh within a few weeks and return to prime condition.

Roosters will molt as well, and although it will not affect their fertility, you may find that they will not be as energetic or chase after the hens as much, or at all, during this time.

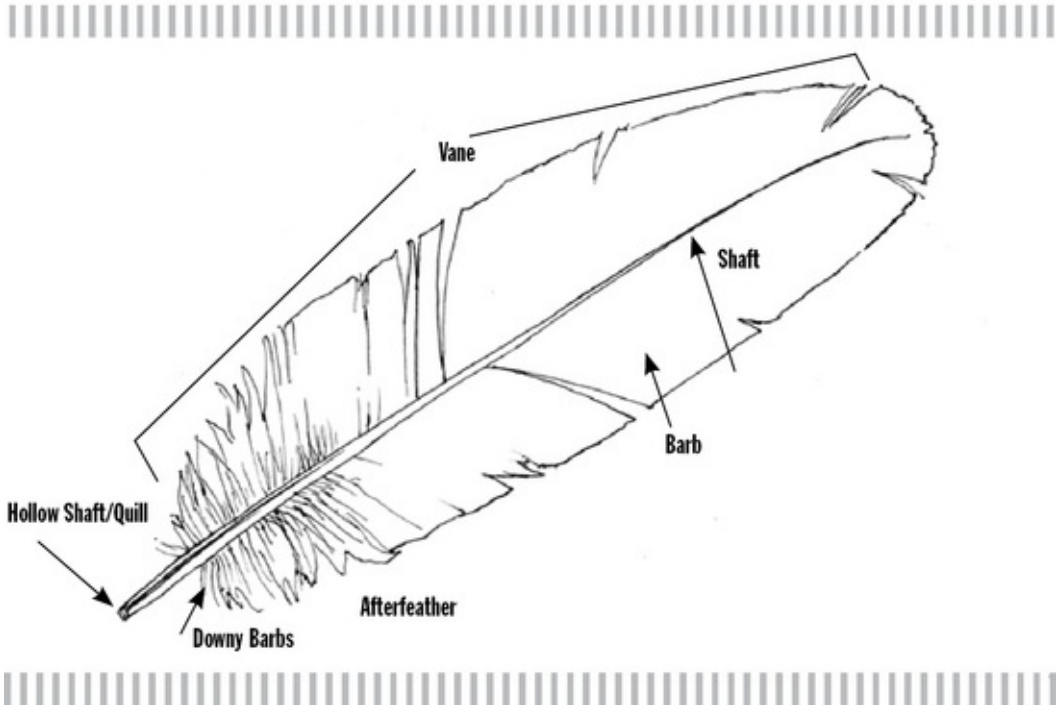
However, before the first "adult" molt takes place, chicks will go through a few molts during their growth period. Chicks are born with a down, fuzzy type of feather. Between six to eight

days old, they will begin a molt to rid themselves of this down. It will last about four weeks, at which time their first set of real (although baby) feathers will appear.

At seven to twelve weeks, they will go through a second molt. It is during this period that the chicks will shed the feathers they just grew, and a new second set will take their place. It is during this period that distinguishing feathers will come in, including the roosters' striking feathers. This will be the only time that a chicken will have multiple moltings within a short period of time.

Although molting usually does follow a seasonal pattern (except for chicks), for some birds, that pattern may have changes due to any number of reasons, including stress or lack of food, which can cause out-of-season molting. Any out-of-season molting or multiple moltings within a year should be addressed and, if possible, corrected for the health of the birds. The Resources section of this book contains links to websites and publications that address molting to give you a more in-depth look at this natural cycle that your birds will face each year.

One more observation: molting is natural; a "naked" bird that has dropped all of his feathers is not. Should your bird suddenly lose all of his feathers, it is worth a trip to the vet or a consultation with a veteran chicken owner, as there is a problem that needs to be found and solved.



The different sections of a chicken feather. Illustration by Ariel Delacroix Dax.

To clean feathers, place them in a bag and freeze for at least two weeks. Freezing should kill any parasites that may be residing on the feathers. Then wash them in warm water with a mild detergent. Let them dry, either by air drying or putting them in a pillow case. Tie securely, and let them fluff and dry in the clothes dryer. Make sure the case is tied *tightly*, or you will have feathers flying around your dryer. Once the feathers are thoroughly dry, you may package them for sale.

Fly Tying

Some homesteaders will base their breed decisions specifically so they have feathers for **fly tying**. Some of the specific breeds that would be ideal for fly tying use include Barred Rock (Dominiques should work as well, as they look similar), Buff Orpington, White Leghorn (so feathers may be dyed), Silver Wyandotte, Dorking, and Bantam.

Fly tying. Photo by El Frito under the Creative Commons Attribution License 2.0.

In essence, the only way to harvest feathers for fly tying is at slaughter time, so raising for fly tying means also raising for meat (hens or roosters). The one difference there will be in slaughtering with the intent to keep the feathers for tying is that, instead of plucking the bird, you will need to skin the bird (the meat will still be fully usable). As there is a bit of a knack to skinning a bird, it would be worth your time to visit any number of available websites, which will guide you through the process of skinning and preserving the feathered skin. Skinning leaves the feathers intact and mostly undamaged.

As you can see, chickens have many ways to be utilized, both on the farm and at home. Although you may not try all of the suggestions listed, most likely you will try at least one or two.

CHAPTER 11

HERITAGE BREEDS VS. COMMERCIAL-MARKET BREEDS

In the discussion of chickens, it is well worth taking the time to discuss the pros, cons, and differences between heritage breeds and the commercial-market breeds.

Commercial

In the commercial chicken industry, **processors** and **growers/producers** (those who grow for the processor) have pretty much narrowed their breed use down to five primary breeds, with the three most common being the White Leghorn (commercial type), the Rhode Island Red (commercial type), and the Cornish Cross. Although there could be commercial producers/processors who utilize other breeds, they are few and far between. This has not always been the case; in fact, there had been 60 breeds raised in the United States prior to WWII, but most were abandoned for the breeds preferred by the modern commercial poultry industry: five for meat and one for eggs.

Rhode Island Red. Photo courtesy of Micky Rizor Ridgway, Ridgway Hatcheries, Inc.

The reason the large processors demand these few types is due to consumer and/or market demand. The commercial White Leghorns are big egg producers (as are the commercial Rhode Island Red breeds for brown eggs) as well as large meat birds, while the Cornish Crosses are fast (really, *too* fast) growing birds. The Cornish Crosses are a cross between the commercial Cornish and White Plymouth Rock breeds. They grow so quickly that they are usually ready for slaughter at eight to ten weeks of age. Even the home grower will occasionally raise Cornish Crosses for a quick, tasty return for their freezers.

However, along with the fast production and growth that the industry demands, there have been consequences, mainly at the birds' expense. Commercial layers have lost their instinct to brood or care for chicks. Commercial birds, especially layers, are often kept in climate-controlled buildings; now, in an emergency situation in which the power goes out, the birds may have a difficult time surviving. They may have a much thinner coat of feathers, meaning little to no insulation against heat or cold (thinner feathers mean much easier plucking). Eggs may be thin-shelled and yolks much paler. Many commercial breeds cannot mate naturally due to being either a larger than normal size or too large of breast.

The Cornish Cross raised by both commercial and home producers has its own set of problems. Due to those problems, some question whether

or not it is even right to raise the breed. First, they are little eating machines from the time they are chicks to that of slaughter. This is due to their rapid growth, which may also cause a high mortality rate before the chicks reach the eight-week mark. Also due to their rapid growth, their bone structure and muscles do not grow in sync as they should, causing the birds to possibly lose the use of their legs (which is not uncommon). Some may have heart failure. Many home producers state that they have to almost force their birds to get up on their feet, away from the food bowl, and moving around (this is before the leg problems set in). So, if you want to save some chicks for breeding your own for next season, it is almost impossible, again due to their rapid growth rate, weight gain, and health problems. (Some report that a cross of the Sussex and Jungle fowl will give the same results in regard to meat and taste without the rapid growth or health problems.) Lack of space can also be a problem for the Cornish Cross, as the birds will tend to pile on each other in bad weather and cold temperatures. If there is little space, you will have chicks piling on top of each other, and those on the bottom will die of suffocation or, if there are many chicks, might possibly be crushed.

Cornish Cross rooster. Photo by Benny Mazur under the Creative Commons Attribution License 2.0.

On a more positive note, however, some backyard or homestead growers have reported that if the Cornish Cross is raised and *pastured* with other birds, and their feed limited instead of sitting in front of them 24–7, healthier birds result with a slowdown in the growth process, staving off the loss of movement and leg use in some cases.

Sometimes you can get the commercial egg-layer breeds to become part of the flock, if, by chance, you have adopted some retired commercial girls. I took some in myself. It was a toss-up. Some could not make it living as a "real chicken," especially in the winter months, when my losses began. However, the couple that *did* survive blended well, and with a little time and patience, one even *finally* got the idea of being a broody hen.

Perhaps the biggest and potentially most devastating argument against the poultry industry is the risk they open themselves to by relying on only a couple of breeds to carry the entire industry. The fact is one virus or disease, especially one that is highly contiguous in containment situations, can wipe out not only an entire flock, but can also cause serious damage to the entire industry. That's if it doesn't end up wiping it out entirely, due to the lack of (and dire need for) biodiversity. This is when the benefits of the heritage breeds become evident.

Heritage Breeds

Also called antique or heirloom breeds, many of today's backyard chicken owners and homesteaders are keeping **heritage chickens**. By definition, according to the American Livestock Breeds Conservancy, in order to be considered a heritage breed, it must meet the following criteria (in brief):

> ***American Poultry Association Standard Breed:*** Must be from stock recognized by the organization prior to the mid-twentieth century.
>
> ***Natural Mating:*** Heritage chickens must reproduce naturally and be genetically maintained only through natural mating.
>
> ***Long Productive Outdoor Lifespan:*** Heritage chickens must have

the genetic ability to live and thrive outdoors as well as in the pasture. There must be at least five to seven years of productivity for the hen and three to five for the rooster. (I have gotten almost nine productive years out of a rooster.)

Slow Growth: Heritage chickens must have a slow (or moderate) rate of growth. They must not reach breed market weight until 16 weeks or older.

Many heritage breeds are endangered, although both backyard chicken owners and small homesteaders are working to bring many breeds back from the brink, and are having some success in doing so. The American Livestock Breeds Conservancy provides a list of endangered poultry as well as other endangered livestock (see the Resources section).

Selecting Your Breed(s) of Choice

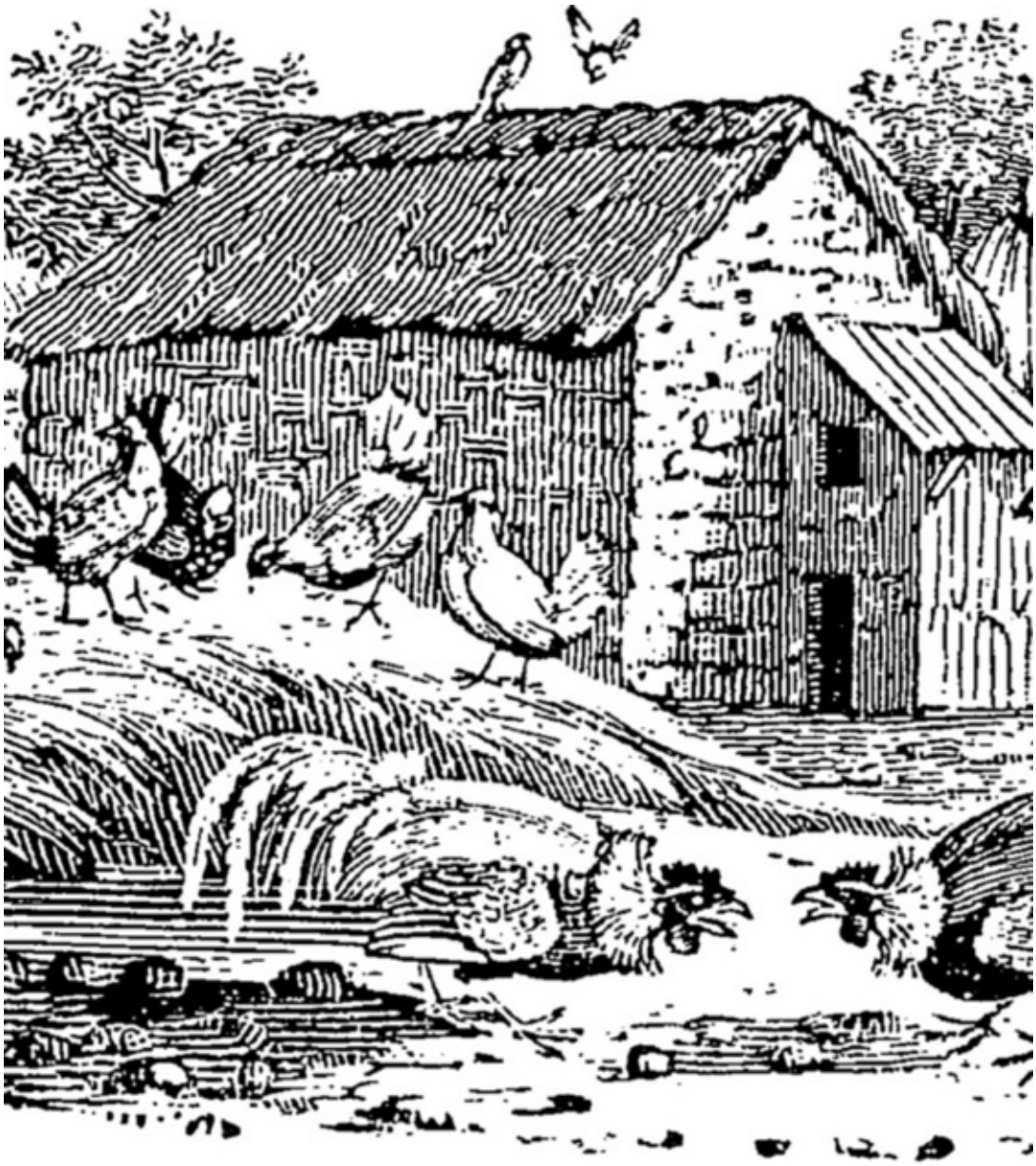
As you can see, there is definitely a difference between commercial/industrial birds and heritage birds, and what you choose to raise depends on what you want, the living conditions that your birds will face, and, if you are selling eggs or meat, consumer demand (although you may build any market you want through educating the consumer). Should you decide that you *do* want to raise White Leghorns or Rhode Island Reds, nonindustrial types are available and can usually be purchased from other breeders, including heritage breeders.

If you can't find heritage breeds in your area, and you do not want to purchase via mail order, the purebred or even "mutt" birds that are raised by backyard breeders or small homesteaders can be good secondary choices. Just make sure to keep in mind your main interest in having birds (eggs, meat, or dual-purpose) and choose accordingly. In the case of "mutt" birds, ask the breeder if the background of the bird is of egg, meat, or dual-type descent. If you don't care as much about having purebred birds as much as you care about good producing birds, "mutts" can work out just as well, providing end results that are just as good as their purebred counterparts. They may even be a bit cheaper to purchase, especially if you don't have a lot of money or budget to work

with.

Whatever you choose, make sure the chicks or birds are happy, healthy, and from good stock and a good breeder or source. If you are purchasing hatching eggs, make sure the eggs are clean, have been stored properly, and are not too old (keep in mind that, if you do buy fertile eggs for hatching, the breeder cannot, in all reality, guarantee the hatch rate, as there are a lot of variables to consider, including proper incubation procedures by the person who has purchased the eggs).

If you are not comfortable caring for little chicks, purchase your birds a little older. You will pay a little more, as the breeder has put more time and money into the birds, but you will be free of the brooders, and the birds should be off to a good start by the time you bring them home, skipping the fuss and muss of little chicks. In the end, choose what is best for you and what you think you can handle as a novice chicken owner.



CHAPTER 12

CHICKENS IN THE CITY … AGAIN

Many city and suburban individuals and families are now keeping chickens in their backyards, while more and more of these areas are slowly changing their regulations, allowing residents to keep chickens, even if it is only a few hens. Is this a new trend? Not in the slightest. Historically, it was not unusual to see chickens in the backyards of some city homes or to see live birds being sold at markets, and then either processed right there while you waited or taken home and processed in the kitchen. Although you probably won't find live birds for purchase at the store today, you can bring some home from an area farm or order from a poultry catalogue and raise them in your backyard, just like people before you did.

What is the reason behind more and more city and suburban dwellers looking to keep their own birds? The same as their rural counterparts: a desire to know where your food comes from and to raise the birds the way you want to, be it for eggs or meat (due to the fact that, normally, only a few birds can be kept in a city or suburban backyard situation, most will be raised for eggs only).

Unfortunately, due to the "noise factor," many city and suburban areas will not allow roosters to be kept. While most city or suburban keepers will be happy to at least have a few hens, it does not allow for the ability to have homegrown fertile eggs for hatching replacement stock from the birds. Yet people also see this as the mere beginning of the movement and continue to advocate for the ability to have at least one rooster in a city or suburban flock.

Keeping chickens in the city is also a great teachable moment to show kids where more of their food comes from. If dealing with little kids who are not ready to learn about where their chicken nuggets come from, focus on the egg-production side of the coin. Discuss eggs as used for eating and as the place where baby chicks come from. Use these moments to your best advantage in your specific situation.

While keeping chickens in the city or suburbs may not keep you self-sufficient in of itself, when paired with a garden, your backyard farm can supply your family with a nice, fresh piece of your food needs, even if only seasonally. And the chickens? They will be so much fun that they just may become part of the family!

Backyard chickens. Photo by Rachel Tayse under the Creative Commons Attribution License 2.0

Keeping chickens in the city is really no different than keeping them in rural areas. Although you may be limited to the number of hens you are allowed (usually six), and roosters may not be allowed due to noise, there is little to no special needs that the city chicken will have to be provided.

However, if you are going to let your hens roam around your yard, you should make sure that you are home and that your yard is well-

fenced, so they don’t wander into your neighbor’s lawn or into the street. If there are too many complaints, you may be forced to get rid of your birds.

FINAL NOTES

Keeping chickens can be a fun and educational family project, as well as a potential food source. Whether you are raising them for eggs, meat, or dual-purpose, chickens are perhaps one of the easiest livestock animals to keep and raise. You'll find that they are not the stupid birds that many believe them to be (especially the heritage birds), and when allowed to raise their own young, chickens can be very attentive parents.

You'll find they are social birds and can be quite the clowns, and at feeding time, you will become their best friend as they come running when they see the food bucket. Chickens are animals that the entire family can help care for and reap the benefits from, but which can also go about their business and find their own food as well. But beware: once you have had your first birds and their fresh eggs, you'll be hooked. And should you decide to keep a house chicken … Yes, they do really make and sell chicken diapers for just that reason.

Enjoy!

RECIPES

Deviled Eggs
(Kim Pezza)

A popular picnic dish, these eggs are flavored to taste and include variations that can be used in their creation. Makes 1 dozen eggs.

6 hard-boiled eggs, shelled
Mayonnaise or salad dressing, to taste
Yellow mustard, to taste

Slice the whole eggs in half lengthwise. Remove yolks, placing them in their own bowl. Lay whites on serving platter for filling.
Smash yolks in bowl with fork. Add mayonnaise or salad dressing to taste. Then add yellow mustard to taste. Mix. Add more of either ingredient, if necessary.
Fill egg whites with mixture, sprinkle with paprika or other garnish, and serve.

Variations:
Use whole garlic-chive blossoms for garnish or finely chop two or three and add to yolk mixture.
Add sweet pickle relish to yolk mixture to taste (usually 1 teaspoon will do).
Add minced, fresh chives to yolk mixture to taste (amount will depend on how strong the chives are).
Add chopped fresh dill to the yolk mixture (about 1 teaspoon or to taste) and garnish each egg with a piece of dill leaf.
Swap out yellow mustard for another flavored type of your choice.

Hints:
Whenever a recipe calls for raw eggs, it is a good idea to break each egg in a separate bowl *before* adding to your mixture. Eggs may sometimes be bad, even bloody, and one bad egg broken into any mixture will render the mixture unusable.

The process is easy. Take the first egg and break into small bowl. If it is okay, pour into the mixture. Then break the next egg into the bowl. Repeat process until all eggs are done. If you get a bad egg, simply throw away the bad egg. Lastly, you should thoroughly clean the small bowl before breaking the next egg into it.

To easily hard-boil eggs without cracking or undercooking, place eggs in a heavy saucepan. Cover with water until there is about 2 inches of water over the eggs. Bring to a rolling boil.

Remove pan from heat and tightly cover. Allow to sit for 12 minutes. Remove eggs from pot of water, placing in a dish of cold water. This will not only help the eggs cool down, but will also stop the eggs from cooking any further.

Peel when cool enough to handle or refrigerate while still in the shell until ready for use.

Farmers' Breakfast
(Kim Pezza)

A hearty working breakfast that can be delicious any time of the day. Don't be afraid to try variations in cheeses. Serves 4.

6 strips bacon
2 teaspoons onions, chopped
3 medium potatoes, or to taste
6 eggs, beaten

½ cup shredded cheddar cheese
Salt and pepper, to taste

Cook bacon in heavy pan until crisp. Remove bacon and place on paper towel to drain. When cool, crumble. Leave drippings in pan.
Cook onions and potatoes together in drippings for 5 minutes or until potatoes are brown with a little crispiness. Pour in beaten eggs, stirring gently until eggs are set. Season to taste.
Remove from heat and sprinkle on bacon and cheese. Let stand, allowing cheese to melt.
As an alternative, the cheese and bacon may be added at the same time that the beaten eggs are mixed in.

Leftover Scramble

(Kim Pezza)

There is no particular rhyme or reason to this recipe … no particular measurements, either. It is a great way to use up leftover vegetables, ham, bacon … whatever you may have available from past meals. It's especially good with asparagus pieces.

Because this is a quick dish, any leftover additives should have already been cooked before being scrambled with the eggs. Otherwise, you may burn your eggs while waiting for your additives to cook.

Simply add the leftovers of your choice into the beaten eggs and scramble as usual. Season to taste.

The amount of leftovers you would use in this dish will depend on the number of eggs you are scrambling and your individual taste. If using leftover onion pieces, caramelizing them first will add flavor depth to the dish.

Potatoes and Eggs

(Kim Pezza)

3 large potatoes (any type with or without skin)

6 large eggs
Salt and pepper, to taste

Wash potatoes and peel, if preferred. Slice into french fry–size pieces. If you have a french-fry machine, it will make this part of the job easier.
Put potatoes into frying pan with enough oil to cook, but potatoes should not be floating in oil. Fry potatoes until they begin to brown and you can easily pierce with a fork. They should be about ready to eat at this point.
Beat together the eggs in a separate bowl. Pour over the potatoes and stir until eggs set. Season with salt and pepper to taste. Remove from heat and serve.

Variations:
Use frozen french fries as a time saver. They still need to be thawed and cooked first, but this saves some prep time.
Add hot sauce of choice to eggs before mixing in, or sprinkle on before serving.

Cheese Omelet

2 eggs
Pinch of salt
Pinch of pepper
½ teaspoon finely chopped parsley
1 teaspoon grated Parmesan, or other cheese

Whisk 2 eggs thoroughly. Mix salt, pepper, parsley, and Parmesan completely into the eggs.
Put a piece of butter the size of an egg into the frying pan. When it is hot, pour in the mixture, and stir it with a wooden spoon until it begins to set. Discontinue stirring, but shake the pan for a minute or so.
When the egg is cooked, fold the omelet in two. When it is lightly

browned, turn it on a hot dish. It should not be overdone, and the inside should be quite juicy.
The frying process should take three minutes. If preferred, the cheese may be finely grated and sprinkled over the omelet after it is cooked, instead of mixed with it before.

Broccoli Frittata

½ cup non-fat cottage cheese
8 eggs
1 large onion, diced
1 teaspoon olive oil
½ teaspoon dried dill
2 cups frozen chopped broccoli
2 teaspoons margarine

Mix cottage cheese and eggs together; set aside.
In large nonstick frying pan over medium heat, sauté onions in oil for 5 minutes, or until soft. Add dill and broccoli; sauté for 5 minutes, or until broccoli mixture softens. Set mixture aside.
Wipe out frying pan. Add 1 teaspoon margarine and swirl the pan to distribute it. Add half of the vegetable mixture, and then add half of the egg mixture; lift and rotate pan so that eggs are evenly distributed.
As eggs set around the edges, lift them to allow uncooked portions to flow underneath. Turn heat to low, cover the pan, and cook until top is set.
Invert onto a serving plate and cut into wedges. Repeat with remaining 1 teaspoon margarine, vegetable mixture, and egg mixture.
Makes 4 servings.

Spinach and Pimento Omelet

1 (10 oz.) box frozen spinach, thawed and dried

1 cup chopped pimentos
1 teaspoon dried thyme
¼ cup chopped scallions
1 teaspoon olive oil
2 tablespoons shredded part-skim mozzarella cheese
2 cups fat-free egg substitute
2 teaspoons fat-free margarine
½ cup diced tomatoes

Chop spinach; place in medium bowl and add the pimentos and thyme.
In a large non-stick frying pan over medium heat, sauté the scallions in olive oil until soft, about 5 minutes. Add the spinach mixture and warm through. Return to the bowl, add mozzarella, and set aside.
In another medium bowl, whisk together the eggs and water.
Place the frying pan over medium-high heat and let stand for about 2 minutes. Add 1 teaspoon of margarine and swirl the pan to distribute it. Add half of the eggs (1 cup egg substitute).
Lift and rotate the pan so that the eggs are evenly distributed. As the eggs set around the edges, lift them to allow uncooked portions to flow underneath. When the eggs are mostly set but not dry (in 2 to 3 minutes), spread half of the spinach mixture over the eggs. Use a spatula to fold the omelet in half. Cut in half and transfer to individual dishes. Repeat with the remaining 1 teaspoon margarine, eggs, and spinach mixture.
Sprinkle each serving with about 2 tablespoons tomatoes. Makes 4 servings.
Variation: Spinach may be substituted with other ingredients such as red peppers, yellow peppers, broccoli, tomatoes, and more!

RESOURCES

American Egg Board
(www.aeb.org)
Can answer a lot of your questions on the egg as food.

American Livestock Breeds Conservancy
(www.albc-usa.org)
Organization that focuses on rare-breed and heritage livestock.

BackYardChickens.com
(www.backyardchickens.com)
Excellent online resource. Has a very informative comprehensive list of plants that are dangerous to poultry.

Backyard Poultry
(www.backyardpoultrymag.com)
Excellent poultry-only magazine, focusing on those readers raising chickens in their backyards. Great pictures and articles.

Cackle Hatchery
(www.cacklehatchery.com)
Another excellent source of poultry for small operations.

***Countryside* Magazine**
(www.countrysidemag.com)
One of the first in self-sufficiency. Lots of articles on poultry.

De Dell Seeds
(www.dedellseeds.com)
Although this company specializes in non-GMO hybrid and organic seed corn, they are also an excellent information source for those who are

concerned about the effects of using feeds containing genetically modified corn and other foods for their livestock, including poultry.

Lancaster Agriculture Products
(www.lancasterag.com)
This company provides a variety of products for those who have sustainable and organic farming operations (large or small). Focus on soil nutrients, animal nutrition/health, gardens, as well as products for pets and people.

FeatherSite
(www.feathersite.com)
Another excellent resource site for the new and experienced owner.

Mother Earth News
(www.motherearthnews.com)
One of the first magazines for those interested in homesteading and self-efficiency. A variety of articles about chickens, their upkeep, and use. Also has articles on building incubators.

Murray McMurrary Hatchery
(www.mcmurrayhatchery.com)
Large hatchery with a variety of birds, including some heritage breeds. Well-known in the chicken community.

New Century Homesteader
(www.newcenturyhomesteader.blogspot.com)
Workshops and programs. Feel free to contact with questions on poultry or any other aspect of backyard farming.

The Poultry Site: Quick Disease Guide
(www.thepoultrysite.com/diseaseinfo)
An excellent total reference site as well as an excellent guide on diseases.

Ridgway Hatchery
(www.ridgwayhatchery.com)
Excellent source with large assortment of poultry for the small farm and homestead.

Sand Hill Preservation Center
(www.sandhillpreservation.com)
Specializes in heritage poultry and heirloom food plants. Excellent variety. Very committed to preservation.